Issue 128
PS
1963
THE PREVENTIVE MAINTENANCE MONTHLY
I KNOW IT'S AN AUTHORIZED TOOL... BUT NOT FOR THAT PURPOSE!!
Will Eisner

Where Do I Fit?

Dear Half-Mast,

I've been reading in newspapers and magazines about the reorganization of the Department of the Army headquarters in Washington.

Where do I fit into this, and what will it mean to a line soldier like me in the combat arms?

M/Sgt H. D. D.

Dear Sergeant H. D. D.,

That reorganization deal is a lot like a train that's just working up momentum—and you've just heard the whistle so far. But: "Lawzy mercy, Miss Nellie! Git up off them tracks—hit's the Limited a-comin'!"

I mean you'll be seeing more and more, faster and faster. The things that you see will be the results of improved materiel support, rather than any direct part of the reorganization.

The greatest impact as far as you're concerned, in the long run, will be that there is *just one* Army outfit running the maintenance and supply business. This means that you should see standardization and universal systems given an even greater boost than they've had before. In the not-too-distant future you should start to see greater compatibility between different kinds of items.

Tho it came a short time before the Army's reorganization, the New Equipment Record System is a sign of things to come. Instead of different systems of maintenance and different systems of records for each of seven different technical services, you've got one—and they're still working hard to cut down on the exceptions and deviations that you find in that one.

Next, you'll start to see and hear (if you haven't already) about things like Consolidated Field Maintenance Shops and Consolidated Support Groups, or Consolidated Supply Groups. This is another sign of the times—that you'll be going to them instead of separate operations like Ordnance or Engineers or Quartermaster.

Another later close-to-you sign that you'll probably get is when your direct-support units are phased out of their technical-service identity into support activities that are organized on a functional or geographical basis. Some of this is a long way off—yet there are some TOE organizations operating like this right now.

And in the long run—long mainly because of the production lead-time involved—you'll start to see the effects of this one command—the Army Materiel Command—showing up in the design and functioning of new items that you get—items designed with one maintenance system and one support system and across-the-board compatibility tops in everybody's mind from the drawing board on out.

"ALL ABOARD!"

Half-Mast

Where Do I Fit?

Dear Half-Mast,

I've been reading in newspapers and magazines about the reorganization of the Department of the Army headquarters in Washington.

Where do I fit into this, and what will it mean to a line soldier like me in the combat arms?

M/Sgt H. D. D.

Dear Sergeant H. D. D.,

That reorganization deal is a lot like a train that's just working up momentum—and you've just heard the whistle so far. But: "Lawzy mercy, Miss Nellie! Git up off them tracks—hit's the Limited a-comin'!"

I mean you'll be seeing more and more, faster and faster. The things that you see will be the results of improved materiel support, rather than any direct part of the reorganization.

The greatest impact as far as you're concerned, in the long run, will be that there is *just one* Army outfit running the maintenance and supply business. This means that you should see standardization and universal systems given an even greater boost than they've had before. In the not-too-distant future you should start to see greater compatibility between different kinds of items.

Tho it came a short time before the Army's reorganization, the New Equipment Record System is a sign of things to come. Instead of different systems of maintenance and different systems of records for each of seven different technical services, you've got one—and they're still working hard to cut down on the exceptions and deviations that you find in that one.

Next, you'll start to see and hear (if you haven't already) about things like Consolidated Field Maintenance Shops and Consolidated Support Groups, or Consolidated Supply Groups. This is another sign of the times—that you'll be going to them instead of separate operations like Ordnance or Engineers or Quartermaster.

Another later close-to-you sign that you'll probably get is when your direct-support units are phased out of their technical-service identity into support activities that are organized on a functional or geographical basis. Some of this is a long way off—yet there are some TOE organizations operating like this right now.

And in the long run—long mainly because of the production lead-time involved—you'll start to see the effects of this one command—the Army Materiel Command—showing up in the design and functioning of new items that you get—items designed with one maintenance system and one support system and across-the-board compatibility tops in everybody's mind from the drawing board on out.

"ALL ABOARD!"

Half-Mast

PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky.

THE PREVENTIVE MAINTENANCE MONTHLY Issue No. 128 1963 Series

IN THIS ISSUE

ARTICLES

FIREPOWER 2-13

Artillery 12-13
Gas Rockets 4
Hawk 5-7
Littlejohn 8-9
Nike-Hercules 10
Small Arms 2-3

14-28 GROUND MOBILITY 37-39

TRACKS
General Lubing 20-21
M88 14-16
M113 18-19
Tanks 17

WHEELS
4 D-T Flat Bed Trailer 39
G-744 Series 27-28, 37-38
M38A1 22-23
M105A1 Trailer 38
M151 22-25

GENERAL
Weight Classification 26

11 GENERAL and SUPPLY 40-48

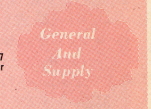
Forms, Records 48
New Publications 11
MHE 165 40-47
Briefs Inside Back Cover

AIR MOBILITY 49-53

Publications 49-51
Safety 52-53

COMMUNICATIONS 54-64

Antennas 54-55
AN/GRC-19 Antenna 58
AN/GRR-5 59
AN/PRC-6 60
AN/PRC-10 59
PDR-39A 62
Publications 63
RT-66-68/GRC 60
Retractile Cords 61
T-195/GRC-19 58
Tools 56-57
Tube Sockets 64
ZM-3/U Tube Shields 63



Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 4 April 1962. DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Names and addresses are kept in confidence, just write to:

Sgt. Half-Mast,
PS Magazine
Fort Knox, Ky.

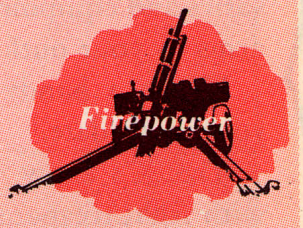
PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky.

THE **PREVENTIVE MAINTENANCE** MONTHLY Issue No. 128 1963 Series

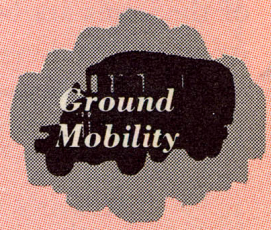
IN THIS ISSUE

ARTICLES



FIREPOWER 2-13

Artillery	12-13	Littlejohn	8-9
Gas Rockets	4	Nike-Hercules	10
Hawk	5-7	Small Arms	2-3

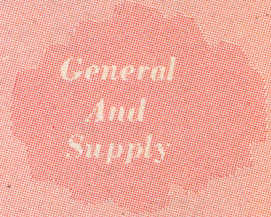


14-28 GROUND MOBILITY 37-39

TRACKS		WHEELS	
General Lubing	20-21	4 D-T Flat Bed Trailer	39
M88	14-16	G-744 Series	27-28, 37-38
M113	18-19	M38A1	22-23
Tanks	17	M105A1 Trailer	38
		M151	22-25

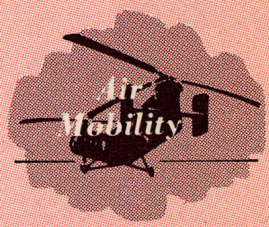
GENERAL

Weight Classification 26



11 GENERAL and SUPPLY 40-48

Forms, Records	48	MHE 165	40-47
New Publications	11	Briefs	Inside Back Cover



AIR MOBILITY 49-53

Publications 49-51 Safety 52-53

COMMUNICATIONS 54-64

Antennas	54-55	RT-66-68/GRC	60
AN/GRC-19 Antenna	58	Retractile Cords	61
AN/GRR-5	59	T-195/GRC-19	58
AN/PRC-6	60	Tools	56-57
AN/PRC-10	59	Tube Sockets	64
PDR-39A	62	ZM-3/U Tube Shields	63
Publications	63		

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 4 April 1962. DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Names and addresses are kept in confidence, just write to:

Sgt. Half-Mast,
PS Magazine
Fort Knox, Ky.

FIREPOWER

SMALL ARMS ACCESSORIES

Up a stump over just what accessories and equipment go with the small arms in your outfit?

Here's a handy chart that'll bring you up to date.

The X's show what equipment go with what weapons . . . remember some of the items are basic or organizational issue while others are TOE authorized.

ACCESSORIES AND EQUIPMENT
Accessory Case
Aiming Device
Barrel Reflector
Bayonet & Scabbard
Blank Firing Attachment
Bore Brush
Chamber Cleaning Brush
Carrying Handle
Cleaning Rod w/Handle
Cleaning Rod Sect (4) w/tip
Cleaning Rod Case
Cleaning Brush Throng
Cloth Mitten
Combination Tool
Combination Wrench Assy
Extractor Pin Tool
Flash Hider
Front Sight Cover
Gas Cylinder Cleaning Tool
Grenade Launcher
Hip Holster
Lubricant Case
Magazine Filler
Magazine Cap
Oiler
Parts Envelope, 2 button
Receiver Cleaning Brush
Rifle Grease Cup
Ruptured Cartridge Extractor
Selector & Selector Pin
Shoulder Holster
Sling
Spare Parts Bag

DRY...DRY...DRY

Plagued with hard stubborn carbon deposits in your M14 rifle's gas system? Could be your PM habits are a little on the weak side as far as making sure no oil gets in the gas system during cleaning operations. Like the good book (TM 9-1005-223-12) says — the gas cylinder, plug and piston must be thoroughly dry before being replaced after cleaning. Give this a special look-see the next time and cut down on your carbon miseries.

READ 'N' HEED

If you've latched on to any of that CRC (Carbon Removing Compound . . . FSN 6850-620-0610), be mighty careful how you use it. It can bite. When bore-cleaning your weapon, try to keep the stuff off your skin by wearing rubber gloves and goggles. But if you do get any on you, wash it off pronto and rub on some good lanolin-base cream.

FIREPOWER

SMALL ARMS ACCESSORIES

Up a stump over just what accessories and equipment go with the small arms in your outfit?

Here's a handy chart that'll bring you up to date.

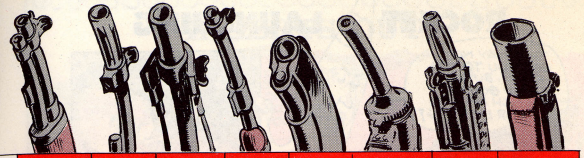
The X's show what equipment go with what weapons . . . remember some of the items are basic or organizational issue while others are TOE authorized.

DRY...DRY...DRY

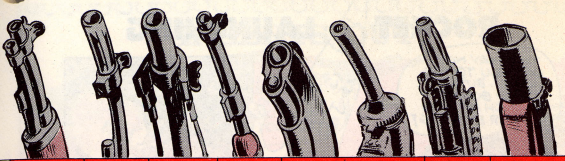
Plagued with hard stubborn carbon deposits in your M14 rifle's gas system? Could be your PM habits are a little on the weak side as far as making sure no oil gets in the gas system during cleaning operations. Like the good book (TM 9-1005-223-12) says — the gas cylinder, plug and piston must be thoroughly dry before being replaced after cleaning. Give this a special look-see the next time and cut down on your carbon miseries.

READ 'N' HEED

If you've latched on to any of that CRC (Carbon Removing Compound . . . FSN 6850-620-0610), be mighty careful how you use it. It can bite. When bore-cleaning your weapon, try to keep the stuff off your skin by wearing rubber gloves and goggles. But if you do get any on you, wash it off pronto and rub on some good lanolin-base cream.

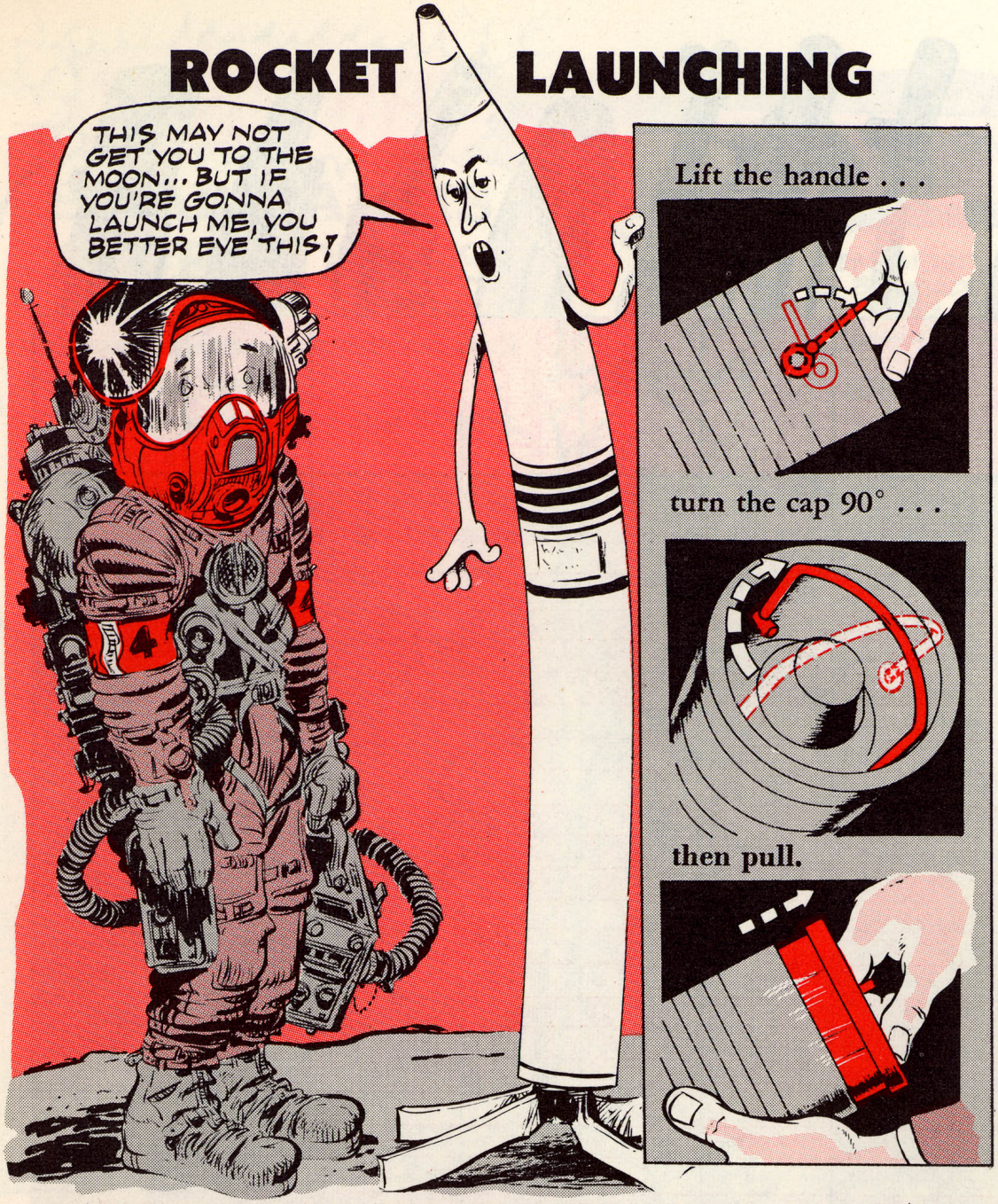


ACCESSORIES AND EQUIPMENT	U.S. Rifle .30 Caliber M1	U.S. Rifle 7.62-mm M14	BAR .30 Caliber M1918A2	Carbine .30 Caliber M1, M2	Pistol, Auto. .45 Caliber M1911A1	Submachine Gun .45 Caliber M3A1	Machine Gun 7.62-mm M60	Grenade Launcher 40-mm M79
Accessory Case								X
Aiming Device	X	X	X					
Barrel Reflector	X		X	X				
Bayonet & Scabbard	X	X		X				
Blank Firing Attachment		X					X	
Bore Brush	X	X	X	X	X	X	X	X
Chamber Cleaning Brush	X	X	X				X	
Carrying Handle			X					
Cleaning Rod w/ Handle	X		X	X	X			
Cleaning Rod Sect (4) w/ tip		X					X	
Cleaning Rod Case	X	X	X	X			X	
Cleaning Brush Throng								X
Cloth Mitten							X	
Combination Tool		X	X		X		X	
Combination Wrench Assy								X
Extractor Pin Tool						X		
Flash Hider	X		X			X		
Front Sight Cover			X					
Gas Cylinder Cleaning Tool			X					
Grenade Launcher	X	X						
Hip Holster					X			
Lubricant Case		X						X
Magazine Filler		X	X			X		
Magazine Cap			X	X		X		
Oiler	X		X	X		X	X	
Parts Envelope, 2 button	X		X			X		
Receiver Cleaning Brush							X	
Rifle Grease Cup	X		X	X				
Ruptured Cartridge Extractor	X		X				X	
Selector & Selector Pin		X						
Shoulder Holster					X			
Sling	X	X	X	X		X	X	X
Spare Parts Bag			X			X		



	U.S. Rifle .30 Caliber M1	U.S. Rifle 7.62-mm M14	BAR .30 Caliber M1918A2	Carbine .30 Caliber M1, M2	Pistol, Auto. .45 Caliber M1911A1	Submachine Gun .45 Caliber M3A1	Machine Gun 7.62-mm M60	Grenade Launcher 40-mm M79
								X
	X	X	X					
	X		X	X				
	X	X		X				
		X					X	
	X	X	X	X	X	X	X	X
	X	X	X				X	
			X					
	X		X	X	X			
		X					X	
	X	X	X	X			X	
								X
							X	
		X	X		X		X	
								X
						X		
	X		X			X		
			X					
			X					
	X	X						
					X			
		X						X
		X	X			X		
			X	X		X		
	X		X	X		X	X	
	X		X			X		
							X	
	X		X	X				
	X		X				X	
		X						
					X			
	X	X	X	X		X	X	X
			X			X		

ROCKET LAUNCHING



That's the latest word on loading the M55, 115-mm gas rockets (rocket, gas, non-persistent, GB, and rocket, gas, persistent, VX).

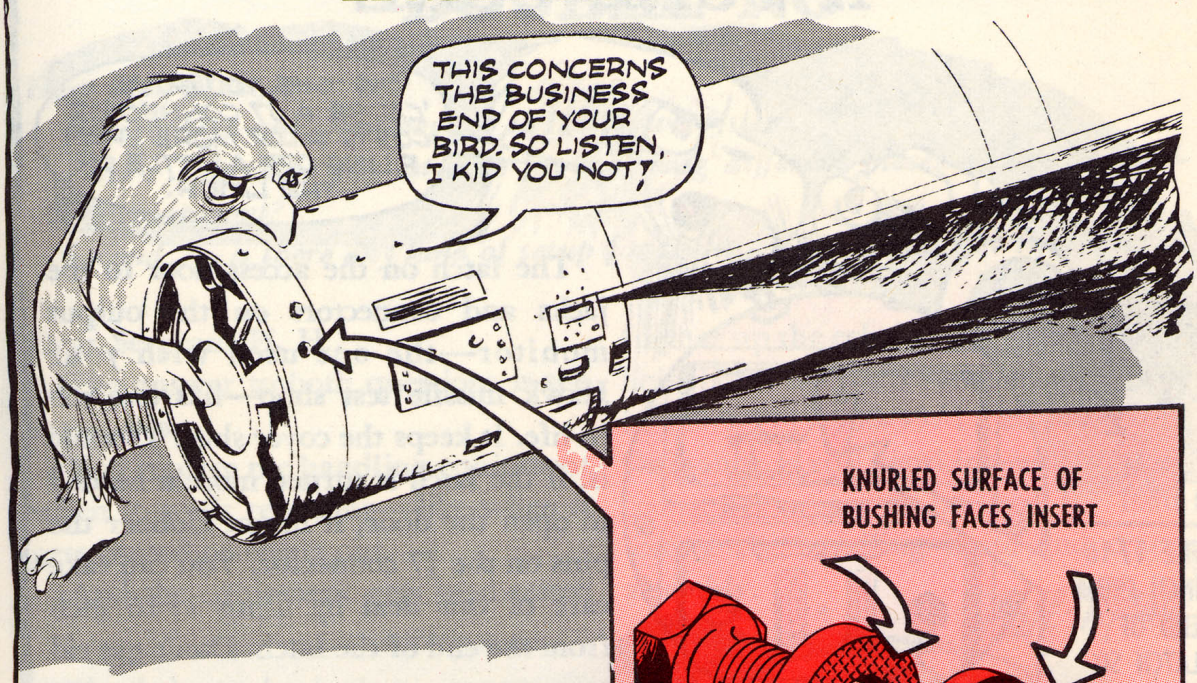
Easy as 1, 2, 3 . . . but very important SOP . . . especially Step No. 2. If you should forget to turn the cap 90° you'll very likely damage the igniter leads when you remove the cap—and you'll have a misfire.

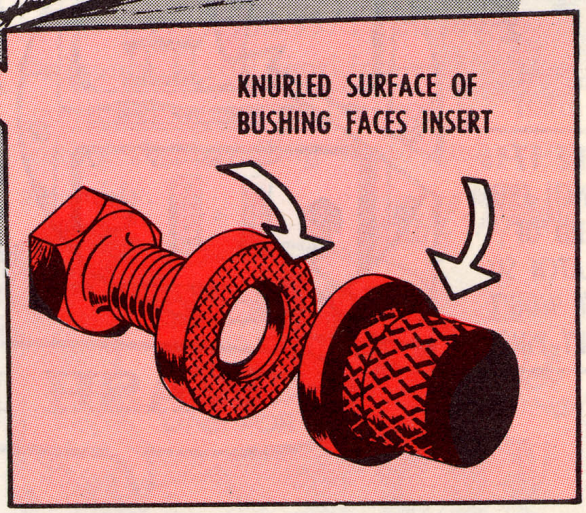
So, all together once again, please:

To safely remove the forward end cap from the rocket's shipping and firing container you raise the handle (to an upright position), rotate the cap 90°, and **then** remove the cap from the container.

Changes 1 to TB CML 73 provides the new procedure for the removal of this end cap.

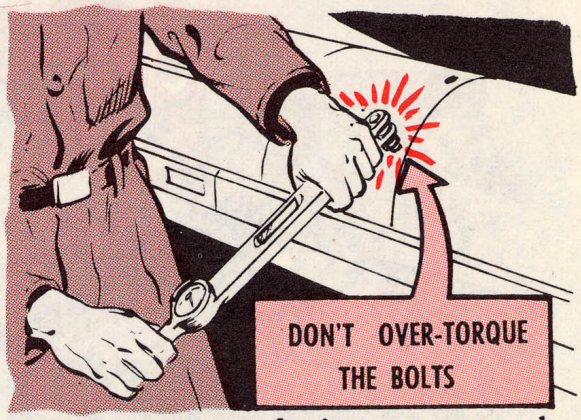
INSERTS OUT?

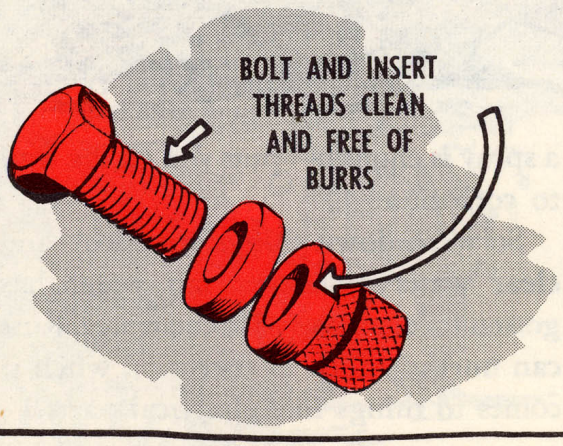




You've got it made if your Hawk battery has warheads with the new inserts. The inserts are made so that they don't get pulled out when you remove the four warhead support bolts from the missile.

If you haven't run across the new inserts, and until they start showing up in your outfit, you want to look ahead to the time that you're gonna have to take out the bolts. There's no guarantee that they won't take the inserts out with 'em. But you can help even out the odds by keeping a coupla things in mind.

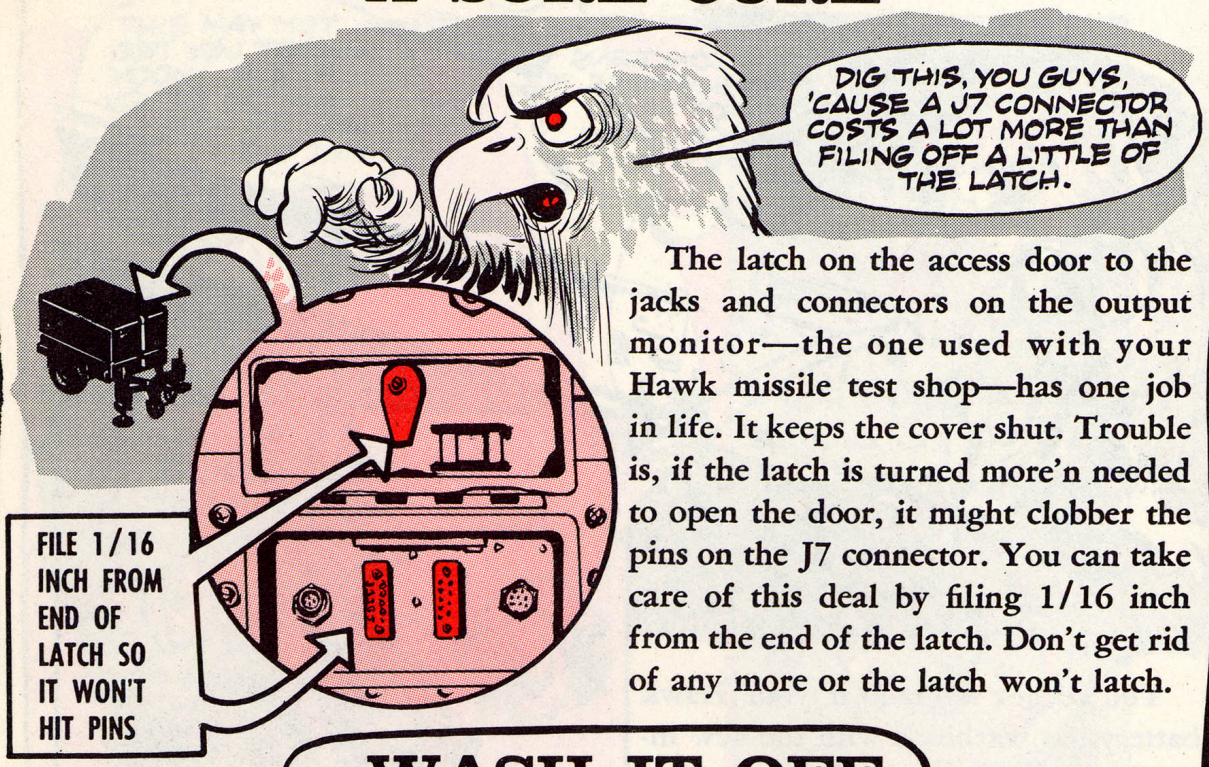




F'rinstance . . . don't over-torque the bolts. And make sure the bolt and insert threads're clean and free of burrs before you tighten down the bolts.

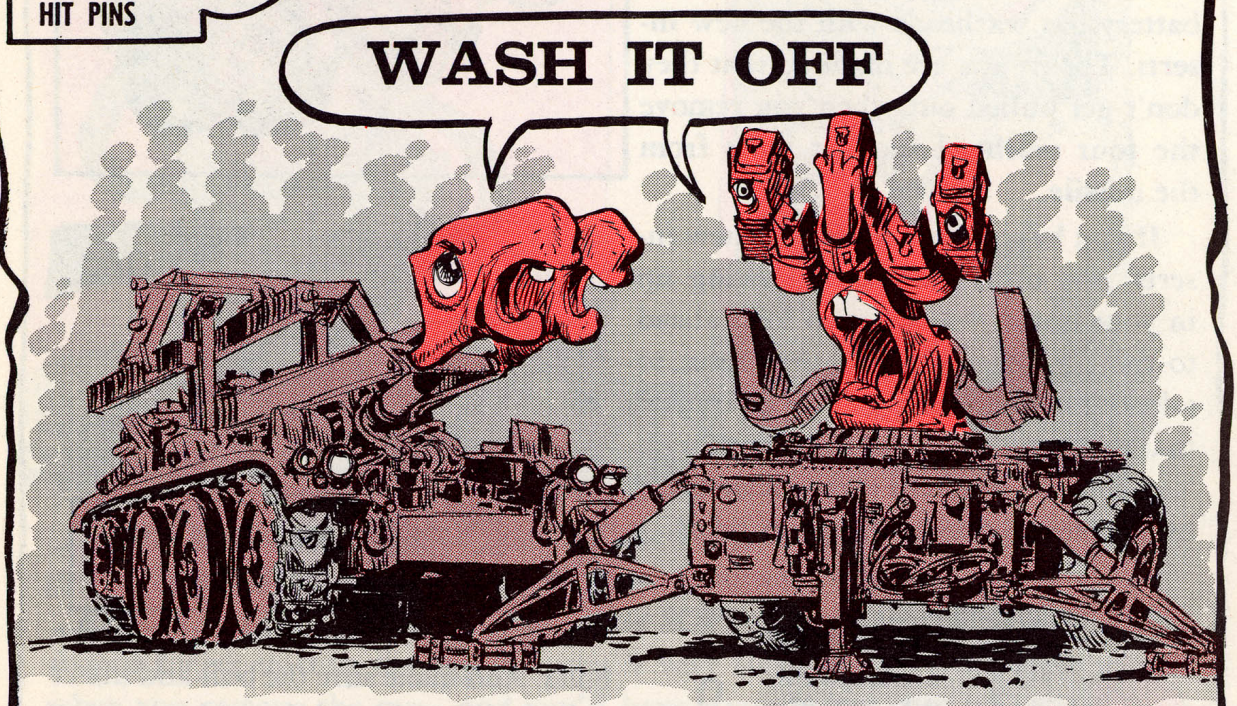
It's also a good idea to remove the warhead and warhead shell as a unit whenever you can. That way, the bolts and inserts are left alone during most of your disassembly operations.

A SURE CURE



The latch on the access door to the jacks and connectors on the output monitor—the one used with your Hawk missile test shop—has one job in life. It keeps the cover shut. Trouble is, if the latch is turned more'n needed to open the door, it might clobber the pins on the J7 connector. You can take care of this deal by filing 1/16 inch from the end of the latch. Don't get rid of any more or the latch won't latch.

WASH IT OFF



Salt water is great for swimming. You sure do feel sticky, tho, if you don't wash it off with soap and clear water.

The same goes for your Hawk equipment—like the missile, loader and launcher—only more so. Salt water—a spray is enough—puts you on the trail to corrosion.

So wash down things with soap and clear water whenever salt water has gotten to 'em. Easy with the water. Rust can hurt as much as corrosion when it comes to things like electrical parts.

DOUBLE NO

Dear Half-Mast,

I've got two questions pegged to the Hawk system.

First . . . is there any set time for replacing different pieces of missile handling equipment?

Second . . . is there any kind of setup for the user load testing the equipment?

M/SGT H. H.

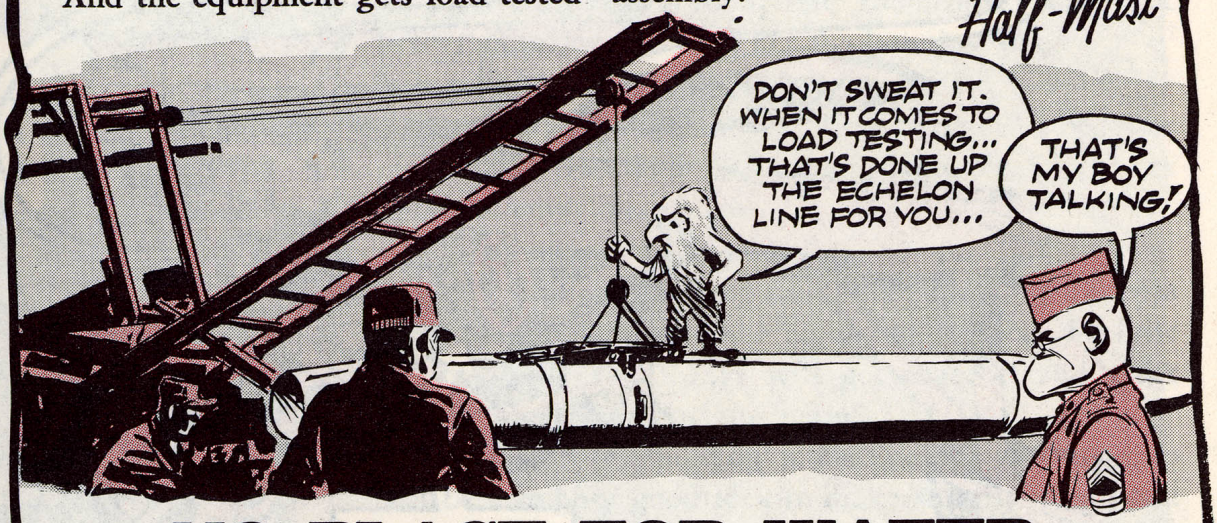
Dear Sergeant H. H.,

The answer to both questions is the same: No.

You replace the handling equipment when it needs replacing—like when it gets busted or wears out.

And the equipment gets load tested further up the echelon line. That is, the hoist beam does according to the scoop in TB 9-4935-500-35/1 (26 Mar 62). Ordnance is still working on the procedures it wants to be used for load testing the handling beam and crane assembly.

Half-Mast

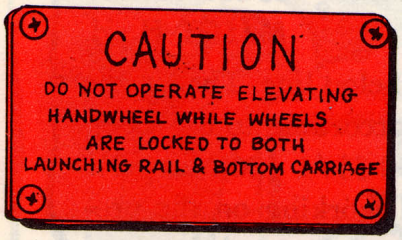


NO PLACE FOR WATER

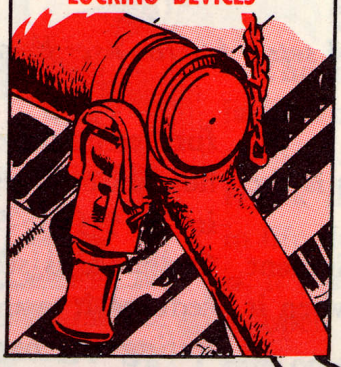
The way things're set up, any water that gets in the loader arms on your Hawk loader-transporter ought to drain out as easy as it got in. But it doesn't hurt to tilt the arms back once in awhile to make sure there's no water in 'em. This makes real sense if you're in a place where the water could turn to ice 'cause that stuff can jam the missile latches. And then they won't be about to extend down and fasten on to the missiles.

YOU BETTER KNOW IT

HEED THIS CAUTION PLATE OR THE ELEVATING MECHANISM WILL . . .

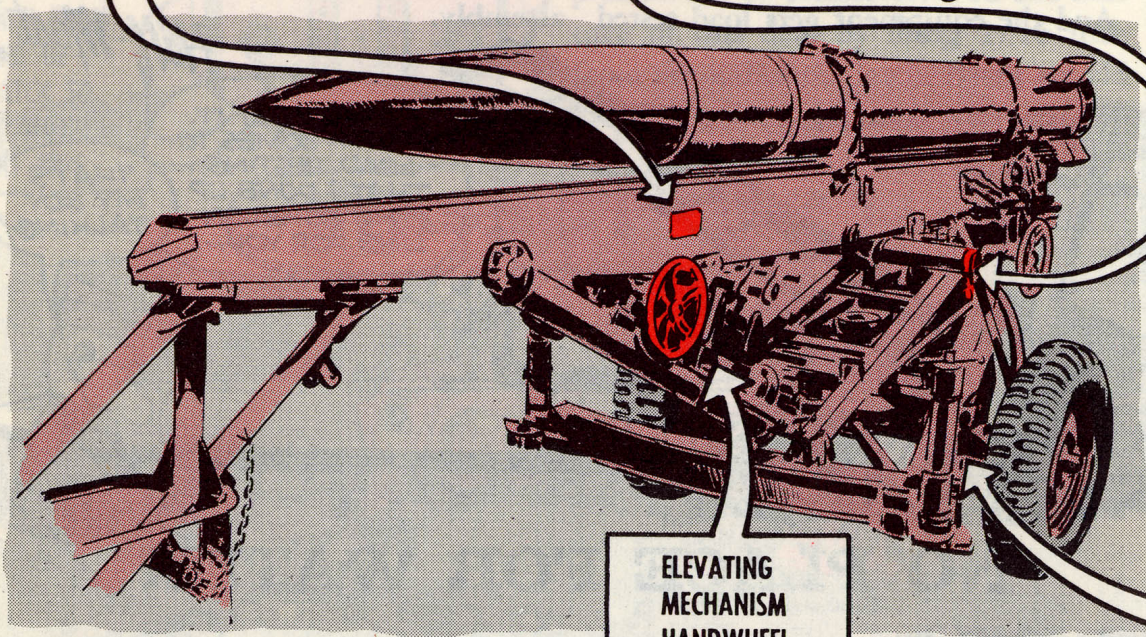


. . . SNAP THE STRUT OVER-CENTER LOCKING DEVICES

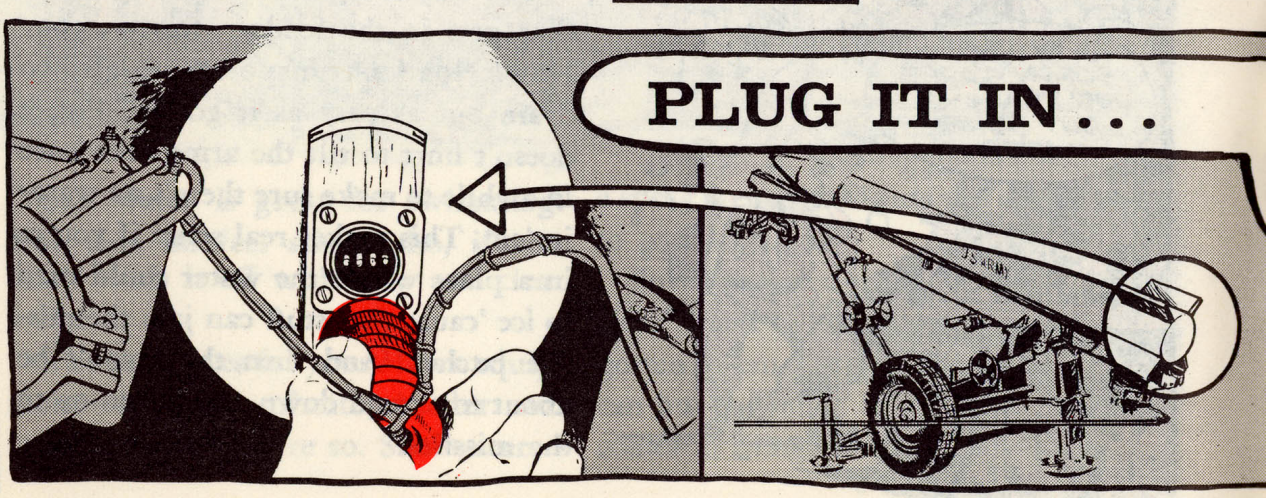


That caution warning on your M34 Littlejohn rocket launcher means just what it says.

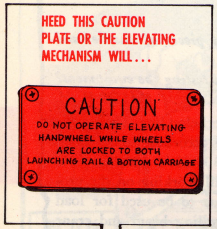
Forget it just once . . . and the elevating mechanism will snap the strut over-center locking devices in no time flat and give you a shrapnel-shower you'll remember for a long time—if you're lucky enough to have another go at it.

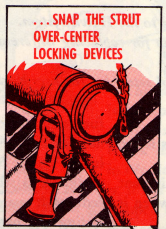


PLUG IT IN . . .



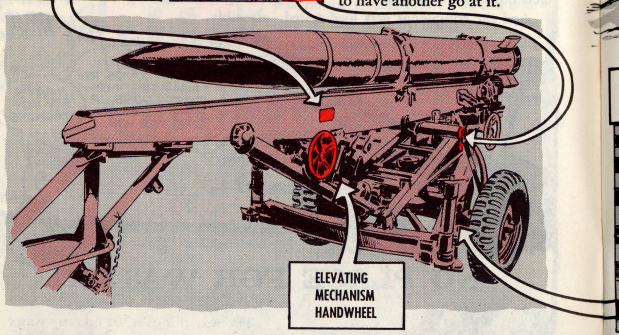
YOU BETTER KNOW IT



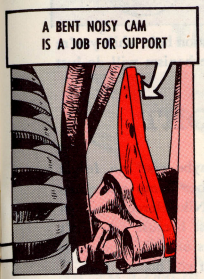


That caution warning on your M34 Littlejohn rocket launcher means just what it says.

Forget it just once . . . and the elevating mechanism will snap the strut over-center locking devices in no time flat and give you a shrapnel-shower you'll remember for a long time—if you're lucky enough to have another go at it.



YAKETY, YAKETY, YAKETY



One of the few things that can drive you nuts faster than a gabby gal is a chattering M34 Littlejohn rocket launcher. Keerect?

Nobody, but nobody, has yet come up with a safe, legal way of turning off a wordy woman . . . but here's the scoop on what's bugging your launcher—and how to make it cut the chatter.

Pure and simple . . . a bent or twisted cam plate might be the culprit.

Just how it developed the twist is anybody's guess. It might have happened when you belted that hidden tree stump on night maneuvers last week or maybe somebody forgot to fully release the spindle and arm stop cam lock before elevating the launcher the last time out.

It could be a lot of things.

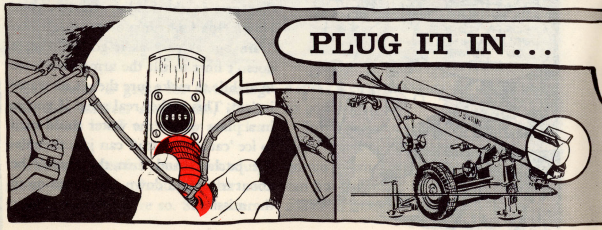
But, regardless of the cause, if the cam plate's bent out of whack—your launcher's gonna stutter and chatter until the cows come home.

The solution? E-e-e-z-z-y.

Tote your lippy lady up to support and have the boys with the knowhow either repair or replace the bent troublemaker and things will get peaceful and quiet around your launching site again.

Natch, before you start screaming for support help it'd be a mighty good idea to make sure the cam plate and traversing plate are lubed like it says in LO 9-1055-212-12, dated Jun 62, because dryness can also cause chattering.

PLUG IT IN . . . ALL THE TIME



You better believe it . . . that electrical connection between the battery and switch assembly and the handle of the inert igniter on the 318-mm Littlejohn training rocket's gotta be made **before** your rocket starts spinning. If the connector's not mated to the receptacle—it's going to make like a whirling dervish and tear the assembly to shreds. If this happens, and it's your fault, you'll be going round and round with you know who.

YAKETY, YAKETY, YAKETY

One of the few things that can drive you nuts faster than a gabby gal is a chattering M34 Littlejohn rocket launcher. Keerect?

Nobody, but nobody, has yet come up with a safe, legal way of turning off a wordy woman . . . but here's the scoop on what's bugging your launcher—and how to make it cut the chatter.

Pure and simple . . . a bent or twisted cam plate might be the culprit.

Just how it developed the twist is anybody's guess. It might have happened when you belted that hidden tree stump on night maneuvers last week or maybe somebody forgot to fully release the spindle and arm stop cam lock before elevating the launcher the last time out.

It could be a lot of things.

But, regardless of the cause, if the cam plate's bent out of whack—your launcher's gonna stutter and chatter until the cows come home.

The solution? E-e-e-z-z-y.

Tote your lippy lady up to support and have the boys with the knowhow either repair or replace the bent troublemaker and things will get peaceful and quiet around your launching site again.

Natch, before you start screaming for support help it'd be a mighty good idea to make sure the cam plate and traversing plate are lubed like it says in LO 9-1055-212-12, dated Jun 62, because dryness can also cause chattering.

ALL THE TIME

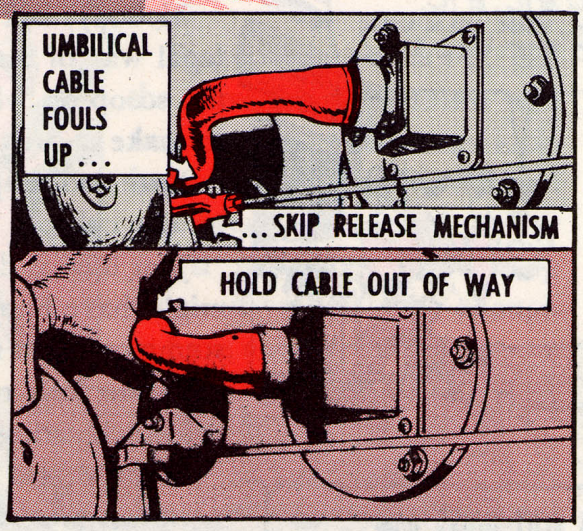
You better believe it . . . that electrical connection between the battery and switch assembly and the handle of the inert igniter on the 318-mm Littlejohn training rocket's gotta be made **before** your rocket starts spinning. If the connector's not mated to the receptacle—it's going to make like a whirling dervish and tear the assembly to shreds. If this happens, and it's your fault, you'll be going round and round with you know who.

OUT OF THE WAY

It's a good deal—the way MWO Y86-W18 (Oct 61) moved the umbilical cable receptacle from the shear plug compartment on your Nike-Hercules XM3 launching and handling rail to the outside of the rail. It did if your rail is serial numbered from 1081 through 1440.

There's one thing you have to watch, tho. The cable can foul up the working of the skip release mechanism.

But as easy as it is for the cable to get in the way of the mechanism, it's just as easy to make sure it's out of the way. Putting the cable in the upper part of the inspection hole while you're operating the mechanism will do just that.



WORTH THE EFFORT

You think maybe you can forget those three snubber pump assemblies on your XM529 Nike-Hercules guided missile trailer just because you don't use 'em for weeks on end? You're on the wrong track if you do.

Unless you use the pump handle once a week to exercise the pump, there's a good chance that rust will form inside. Then comes the day when you have to use the pump assemblies to level the trailer bed. You go to work the handle up and down . . . and that's all she wrote as the seal inside the pump lets go under pressure.

That kind of situation sure makes exercising worthwhile.

A selected list of recent publications of interest to Organizational Maintenance Personnel. This is a list compiled from recent Adjutant General's Distribution Center Bulletins. For complete details see DA Pam 310-4 with latest changes.

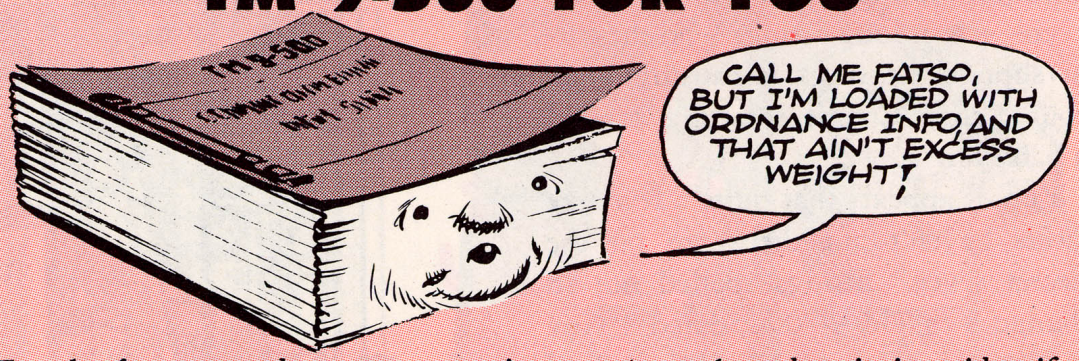
TECHNICAL MANUALS

TM 3-4230-203-12, Mar Decontaminating Apparatus M9.
TM 3-4230-203-20P, Mar Decontaminating Apparatus M9.
TM 3-6665-214-15, Mar Radioactive Source Sets, M3A1 and M3.
TM 5-2410-204-20P, Feb Tractor, Caterpillar D-8.
TM 5-3431-202-10, Feb Welding Machine, ARC, Hobart Model GHB 3183S.
TM 5-3695-204-15, Feb Saw, Chain, Model Strunk G4.
TM 5-3910-203-25P, Feb Conveyor Belt, Barber-Greene Model PH 70.
TM 5-4310-225-15, Mar Compressor, Schramm Model NWE 60.
TM 5-4930-202-20P, Mar Lubricating Unit, GRAY MODEL 250-530.
TM 5-6115-272-25P, Mar Generator Set, Winpower Model G-0536AS 1A08.
TM 9-1220-221-10/2, Jan Computer Gun Direction, M18.
TM 9-1400-455-12, Apr ENTAC System.
TM 9-1450-250-12P/3, Feb Nike-Hercules and Imp, Ground Handling.
TM 9-1550-200-20/2, Feb TARGET Missile, Ground Handling.
TM 9-2320-211-10, Mar Truck 5 Ton G744-series, Medium M246.
TM 9-2330-228-14, Mar Corporal and Redstone.
TM 9-4935-303-12P, Mar Sergeant Test Equip.
TM 9-6920-455-12, Apr ENTAC Training Devices.
TM 9-8022, C9, Jan Truck 2-½-Ton G742-series.
TM 10-3920-205-20P, Mar Truck, Lift, Fork, MHE116.
TM 10-4930-203-24P, Mar Loading Standard, Liquid.
TM 10-7310-201-25P, Mar Accessory Outfit, Gasoline Field Range.
TM 10-8415-202-23P, Mar Helmet APH-5.
TM 11-3895-208-12, Mar Cable Layer, Underground LC-236/MT.
TM 11-6625-422-20P, Feb Test Sets, Teletypewriter AN/GGM-1, AN/GGM-2, AN/GGM-3, AN/GGM-4 and AN/-GGM-5.
TM 11-6625-488-15, Jan Preamplifier AM-3148/USM.
TM 11-6625-514-20P, Mar Test Set, Electronic Circuit Plug-in Unit AN/GRM-55.
TM 11-6625-524-14, Feb Electronic Voltmeter AN/URM-145.
TM 11-6625-539-15, Feb Transistor Test Set TS-1836/U.

MISCELLANEOUS

AR 750-10, Mar Equipment & Materiel Readiness.
MWO 9-1005-224-20/2, Feb Blank Ammo Firing Attachment M13.
MWO 9-1100-225-20/1, Jan Procedural Instr, XM55 ADC(TADM).
MWO 10-1670-218-20/1, Mar Parachute Replacement of Static Line.
SM 9-4-4910-A88, Feb Tool Kit, Organ No. 1 Com.
SM 9-4-4933-A15, Mar Tool Set, Aircraft Armament Repairman MOS427, Basic.
SM 9-4-4933-A16, Mar Tool Set—Aircraft Armament Repairman MOS-427, Supp.
SM 55-C3940-SL-1, Jun Class 3940, Blocks, Tackle, Rigging and Slings.
TB 34-9-140, Feb Water Purification Unit, 1500 GPH.

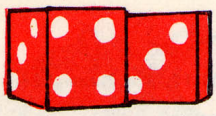
TM 9-500 FOR YOU



For the facts on ordnance-type equipment (complete description, identification, family history, pictures, the works) you've now got TM 9-500 (Sep 62). This new reference handbook is a real fatso, and it supersedes TM 9-236 (12 Sep 60), TM 9-2200 (9 Oct 56) and TM 9-2300 (3 May 49) with its Change 1 (31 Oct 56).

M543 WRECKER OEM

Hey, there! Looking for the publication that lists all the vehicular tools and equipment and special purpose tools for your 5-ton M543 wrecker? The OEM (OVE, OVM, BIIL) tools are now listed in the new TM 9-2320-211-10 (Mar 63). (They may be showing up in a new -20P, too.) Although the TM's initial distribution only gives you two copies, you should have one copy for every truck that's in your outfit. Next time your pubs clerk sends in a DA Form 17 for more publications, have him ask for enough of this TM to go around.



Old number seven's the key to many things.

It's the dipsy digit you sweat blood for at Las Vegas—and it's also the magic number that goes a far piece in keeping your M44 SP 155-mm howitzer in shootin' shape.

That's for sure . . . failure to hit seven—seven lube fittings—on the turret support bearings is causing more trouble than Connie strutting around in a bikini.

Yup, it appears that quite a few arty outfits haven't got the word on the "secret seven" fittings spelled out in Change 3 to TM 9-7004, dated 3 Nov 61, 'cause replacement of rings and rollers on the turret is a flat 100 percent during rebuild.

To cut down on this rebuild headache—and keep your weapon combat ready—here's a general guide that'll get you started on the right road to the "secret seven" that must be lubed quarterly with GAA.

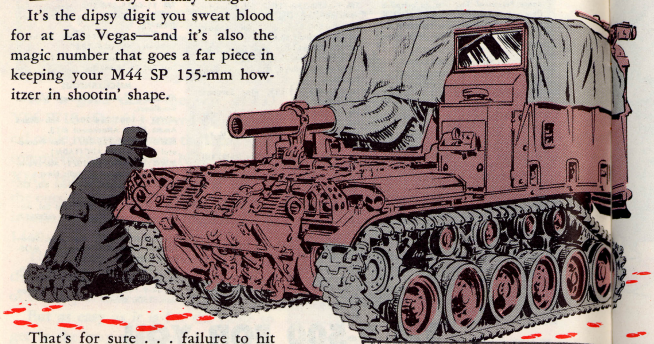
Five of the fittings can be located inside the crew compartment. First, traverse the turret and look down between the trunnion walls and the rear of the turret and you'll spot three lube fittings.

Next hit the lube fitting you see looking through the hole in the turret floor to the left of the traversing gear box.

THE SECRET SEVEN

Old number seven's the key to many things.

It's the dipsy digit you sweat blood for at Las Vegas—and it's also the magic number that goes a far piece in keeping your M44 SP 155-mm howitzer in shootin' shape.

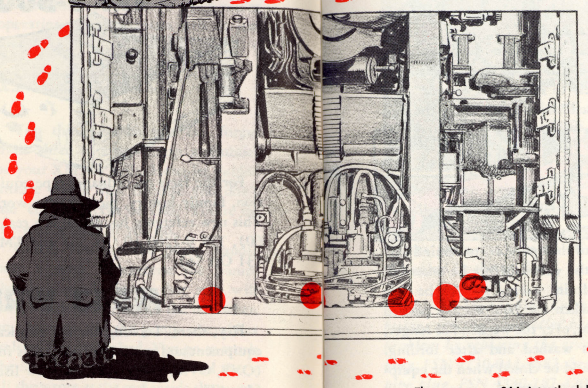


That's for sure . . . failure to hit seven—seven lube fittings—on the turret support bearings is causing more trouble than Connie strutting around in a bikini.

Yup, it appears that quite a few arty outfits haven't got the word on the "secret seven" fittings spelled out in Change 3 to TM 9-7004, dated 3 Nov 61, 'cause replacement of rings and rollers on the turret is a flat 100 percent during rebuild.

To cut down on this rebuild headache—and keep your weapon combat ready—here's a general guide that'll get you started on the right road to the "secret seven" that must be lubed quarterly with GAA.

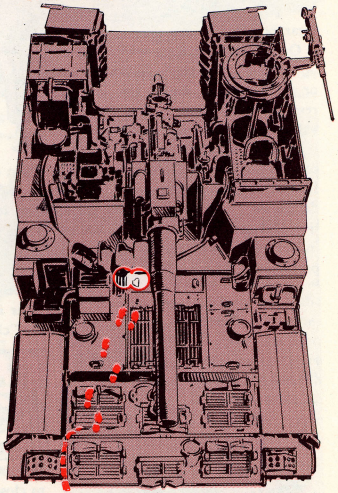
Five of the fittings can be located inside the crew compartment. First, traverse the turret and look down between the trunnion walls and the rear of the turret and you'll spot three lube fittings.



Next hit the lube fitting you see looking through the hole in the turret floor to the left of the traversing gear box.

Then get some GAA into the lube fitting sitting directly below the hole in the turret floor to the right of the elevating gear box.

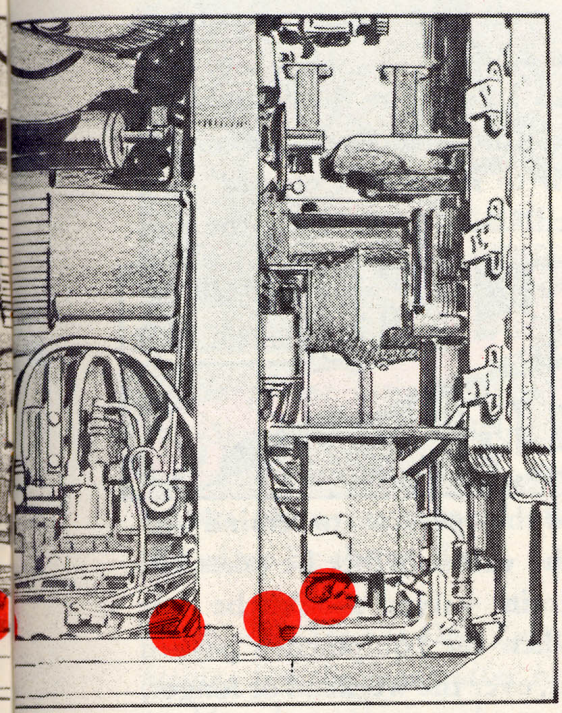
OK! Five down and two to go!

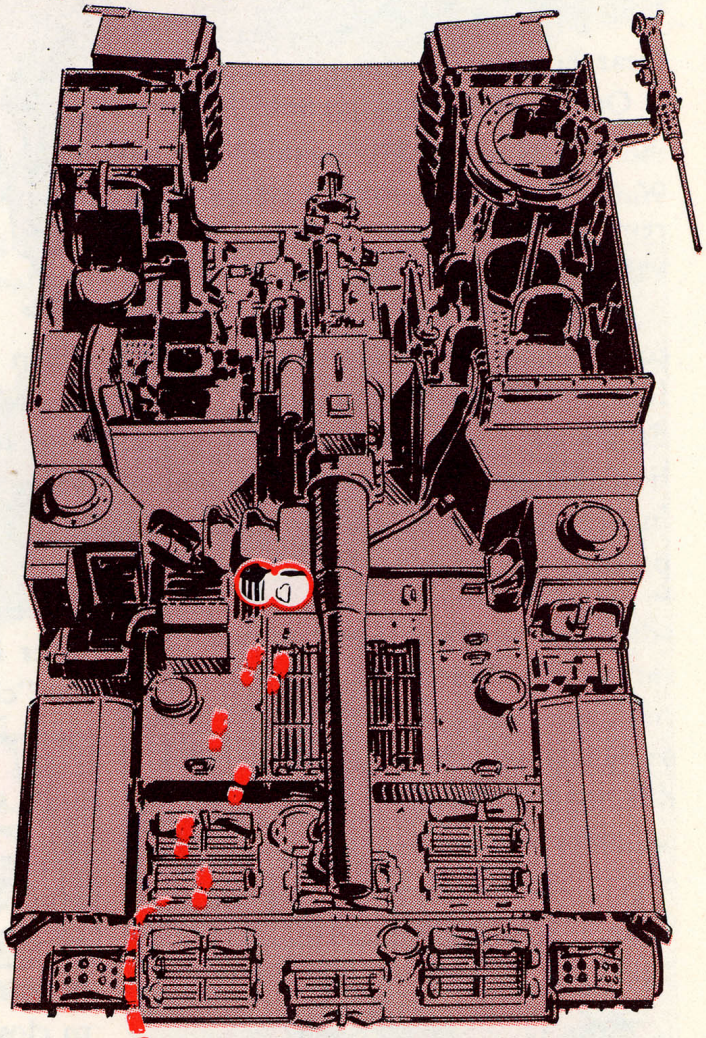


Now climb around on the front, outside of the crew compartment. Just below the howitzer mantle is an inspection plate held in place with ten bolts.

Remove the plate and the mystery's over—because the final pair of lube fittings come into view and you've solved the mystery of the long-lost "secret seven."

THE SECRET SEVEN



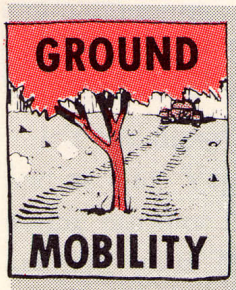


Then get some GAA into the lube fitting sitting directly below the hole in the turret floor to the right of the elevating gear box.

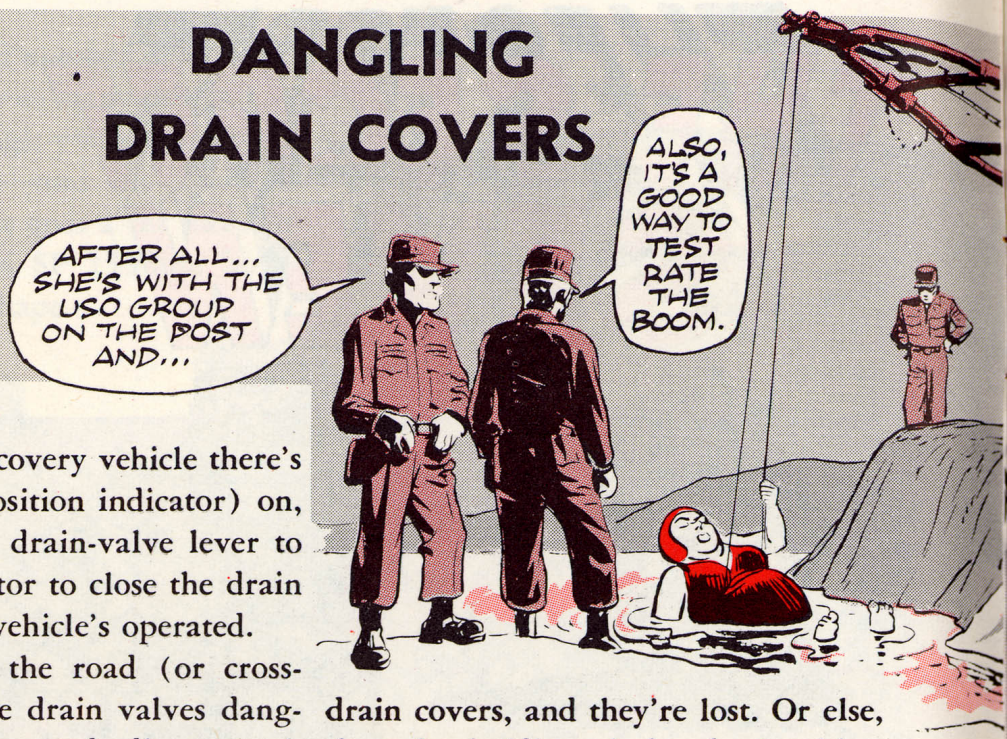
OK! Five down and two to go!

Now climb around on the front, outside of the crew compartment. Just below the howitzer mantle is an inspection plate held in place with ten bolts.

Remove the plate and the mystery's over —because the final pair of lube fittings come into view and you've solved the mystery of the long-lost "secret seven."



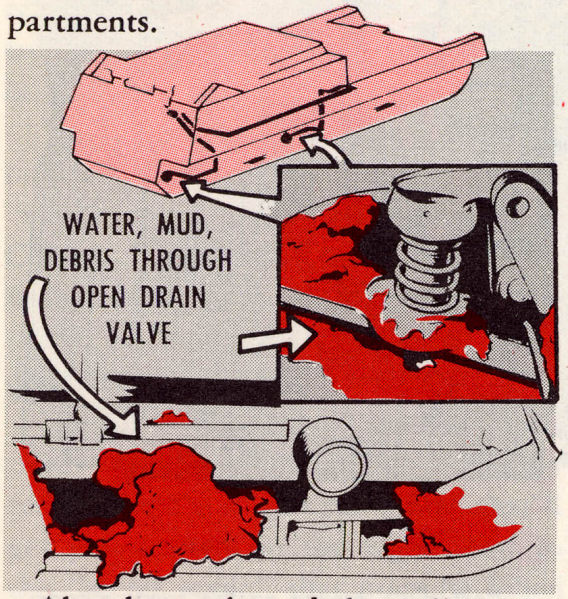
DANGLING DRAIN COVERS



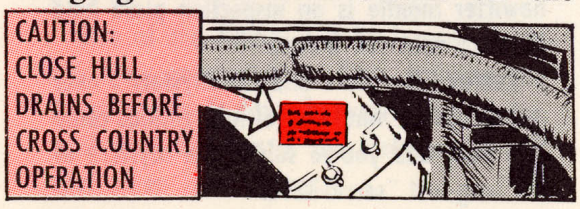
Dear Editor,

On the M88 recovery vehicle there's no caution (or position indicator) on, or near, the hull drain-valve lever to remind the operator to close the drain valves when the vehicle's operated.

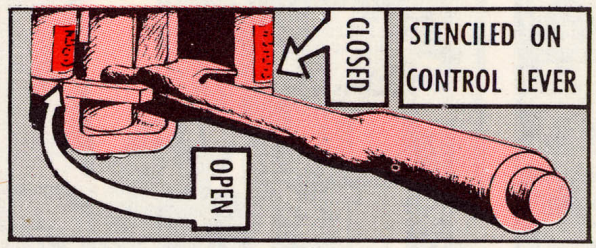
Rolling down the road (or cross-country) with the drain valves dangling can scoop up mud, dirt, gravel, debris, etc., into the hull. The collection of crud can create serious problems in both the engine and in winch compartments.



Also the strain and the pull on the hanging valves often breaks off the drain covers, and they're lost. Or else, the valve holding pin breaks. In either case it means replacing the complete valve assembly since repair parts for it aren't available.



To help stamp out these problems we're now using stencils on the control lever itself to show the "opened" and the "closed" slots, and also on the hull



in front of the operator to remind him to close the valves before he takes off.

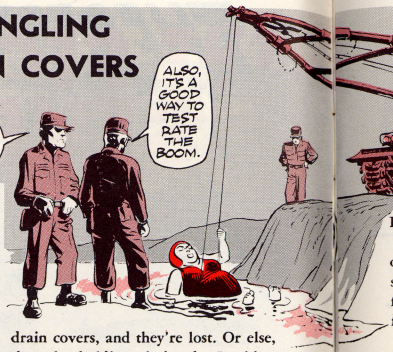
The drain valves should be left opened when the equipment's parked over-night, over the weekend or longer, when it's washed and after fording. They should be closed when the equipment's being operated.

Mr. R. McK.

(Ed Note—Fair warning. And, how about an EIR on the problem?)

GROUND MOBILITY

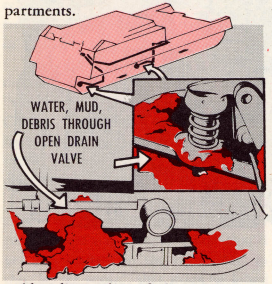
DANGLING DRAIN COVERS



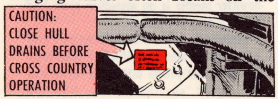
Dear Editor,

On the M88 recovery vehicle there's no caution (or position indicator) on, or near, the hull drain-valve lever to remind the operator to close the drain valves when the vehicle's operated.

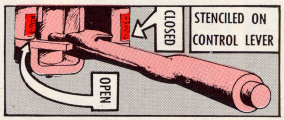
Rolling down the road (or cross-country) with the drain valves dangling can scoop up mud, dirt, gravel, debris, etc., into the hull. The collection of crud can create serious problems in both the engine and in winch compartments.



Also the strain and the pull on the hanging valves often breaks off the drain covers, and they're lost. Or else, the valve holding pin breaks. In either case it means replacing the complete valve assembly since repair parts for it aren't available.



To help stamp out these problems we're now using stencils on the control lever itself to show the "opened" and the "closed" slots, and also on the hull



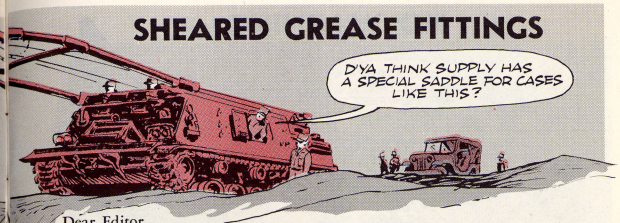
in front of the operator to remind him to close the valves before he takes off.

The drain valves should be left opened when the equipment's parked over-night, over the weekend or longer, when it's washed and after fording. They should be closed when the equipment's being operated.

Mr. R. McK.

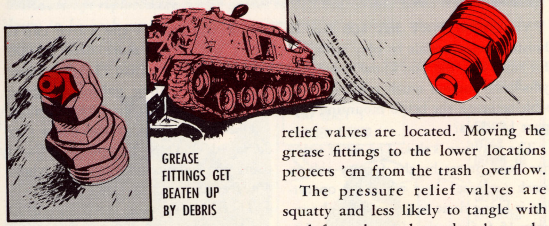
(Ed Note—Fair warning. And, how about an EIR on the problem?)

SHEARED GREASE FITTINGS



Dear Editor,

We're saving ourselves some grief on the M88 recovery vehicle by simply switching the locations of the grease fittings and the pressure relief valves for the front idler housings.



The grease fittings sit up high on the idler housings, and quite close to the tracks. Sticking out as they do the fittings often get sheared off by stuff picked up by the tracks.

There's more elbow room further down the housing, where the pressure relief valves are located. Moving the grease fittings to the lower locations protects 'em from the trash overflow.

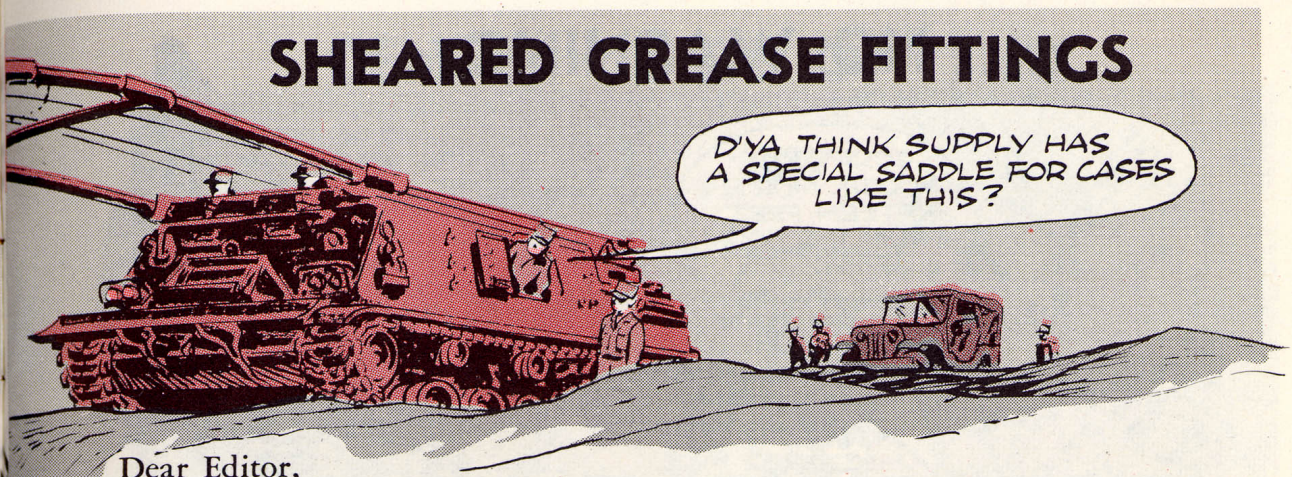
The pressure relief valves are squatty and less likely to tangle with trash from the tracks, and so they make out OK in the spot where the grease fittings normally sit.

Both fittings can be moved easily with a 9/16-in open-end wrench.

Mr. N. M.

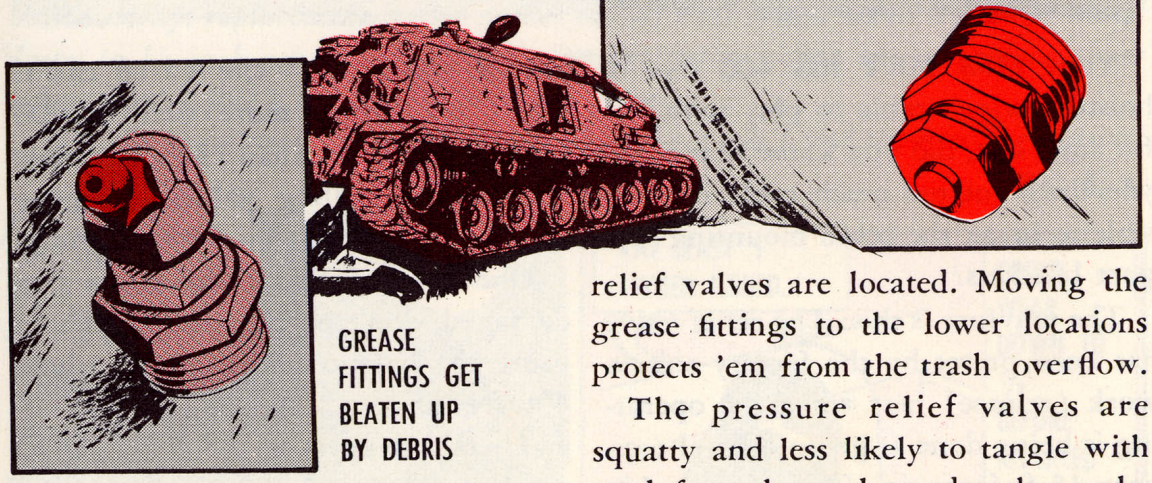
(Ed Note—Sounds OK. Later model M88's sport a comparable arrangement of fittings for the front idler bearings. Others, in your shoes, have licked the old problem by replacing the grease fitting with a 1/8-inch pipe plug. They used pipe plug, FSN 4730-044-4687, hex-socket, headless steel, 1/8-27 NPT (444687), or pipe plug, FSN 4730-187-4200, square-head, steel, 1/8-27 NPT. Swapping the grease fitting for a plug leaves the pressure relief valve where it'll be safe from accumulation of mud, ice and trash. You've just gotta swap a grease fitting for the plug whenever lube time rolls around.)

SHEARED GREASE FITTINGS



Dear Editor,

We're saving ourselves some grief on the M88 recovery vehicle by simply switching the locations of the grease fittings and the pressure relief valves for the front idler housings.



GREASE FITTINGS GET BEATEN UP BY DEBRIS

The grease fittings sit up high on the idler housings, and quite close to the tracks. Sticking out as they do the fittings often get sheared off by stuff picked up by the tracks.

There's more elbow room further down the housing, where the pressure relief valves are located. Moving the grease fittings to the lower locations protects 'em from the trash overflow.

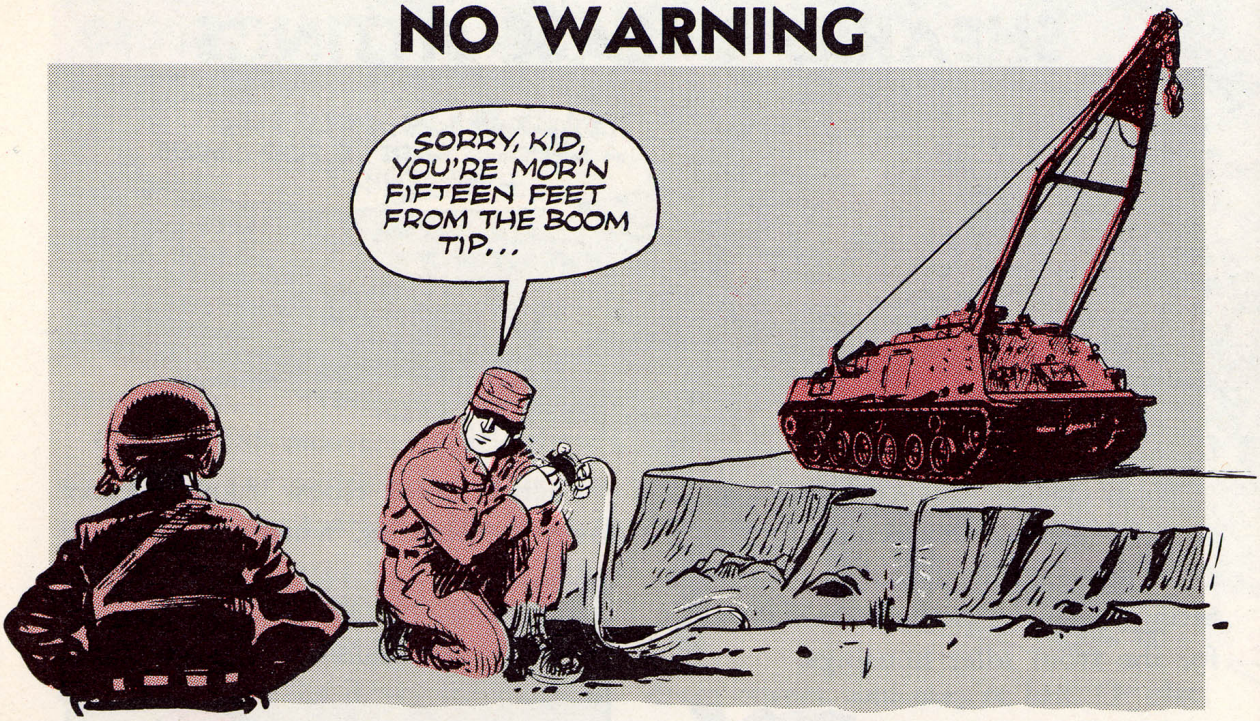
The pressure relief valves are squatty and less likely to tangle with trash from the tracks, and so they make out OK in the spot where the grease fittings normally sit.

Both fittings can be moved easily with a 9/16-in open-end wrench.

Mr. N. M.

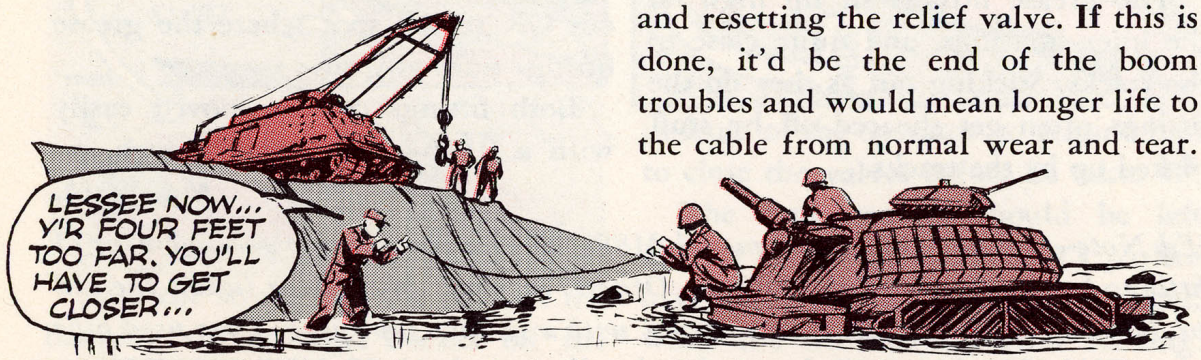
(Ed Note—Sounds OK. Later model M88's sport a comparable arrangement of fittings for the front idler bearings. Others, in your shoes, have licked the old problem by replacing the grease fitting with a 1/8-inch pipe plug. They used pipe plug, FSN 4730-044-4687, hex-socket, headless steel, 1/8-27 NPT (444687), or pipe plug, FSN 4730-187-4200, square-head, steel, 1/8-27 NPT. Swapping the grease fitting for a plug leaves the pressure relief valve where it'll be safe from accumulation of mud, ice and trash. You've just gotta swap a grease fitting for the plug whenever lube time rolls around.)

NO WARNING



Your M88 MRV has 400 feet of hoisting winch cable to play with . . . for sure, but, did you know that when you drag out too much cable it's possible to break the boom mounting support brackets?

The whyfore is this: The relief valve has been preset by the factory so's to work (release) best when the operating is being done at **ground level** (approx 15 ft from tip of boom to hook).



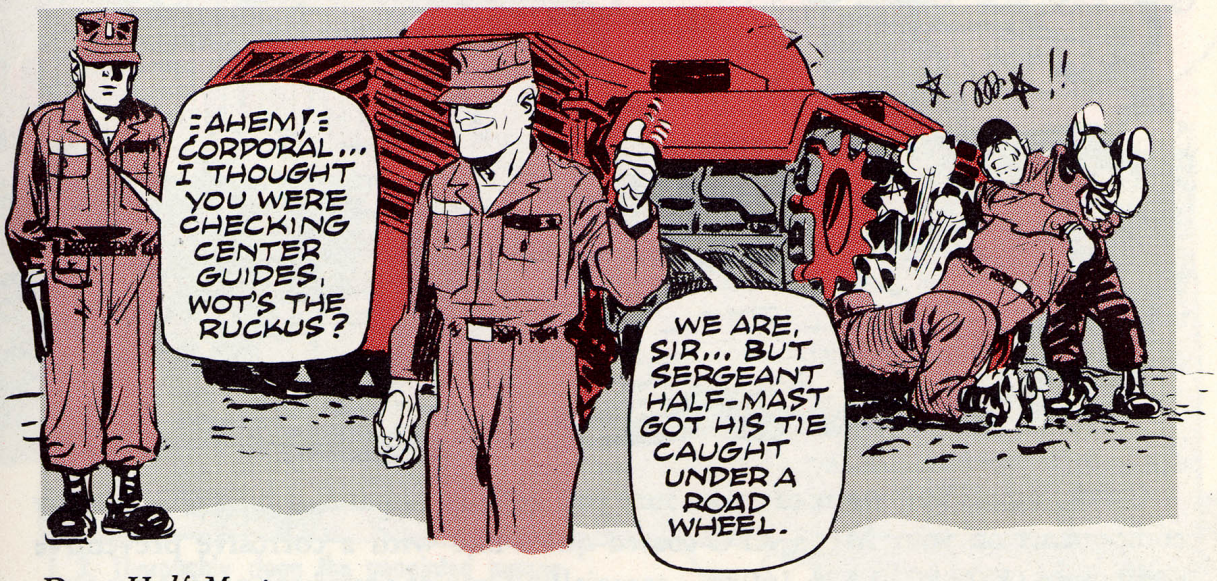
So comes the time when you hafta pay out more cable than this to latch onto the object to be lifted. The object better not weigh more than 50,000 pounds, 'cause the relief valve isn't gonna warn you—the valve can't. Don't try lifting more than 50,000 pounds with more than 15 feet of cable because the pulling values change—and the valve won't give you warning.

One more thing, if the cable gets damaged, don't be choppin' it off and using the balance. Replace the whole 400 feet at once.

There's some talk about an MWO maybe chopping 200 feet off the 400 and resetting the relief valve. **If** this is done, it'd be the end of the boom troubles and would mean longer life to the cable from normal wear and tear.

In the meantime, using the 4-part line and keeping the load limits in mind when making with the lifts, is all the savvy needed to keep 'er hoisting like she should.

CENTER GUIDE ON THIS

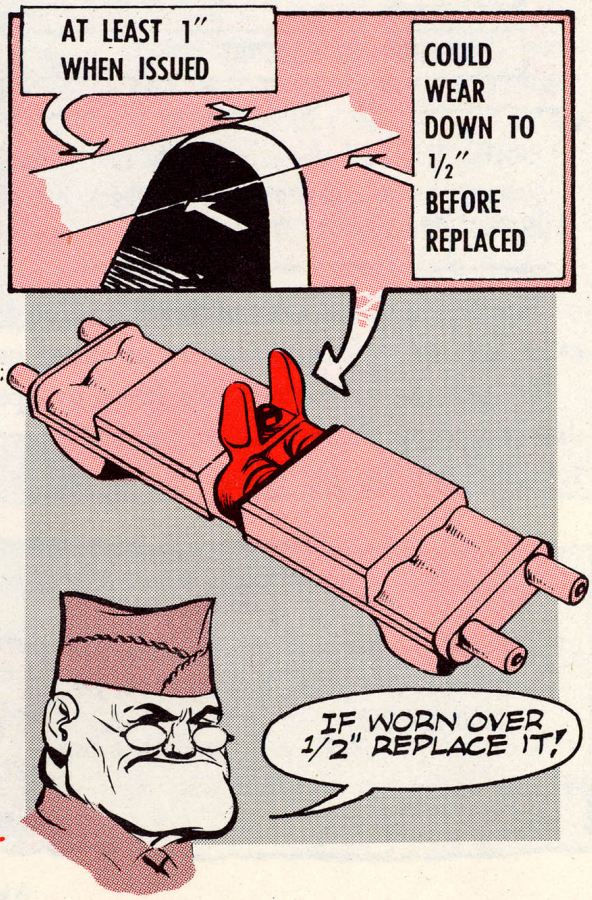


Dear Half-Mast,

We always replaced the center guides on our tank tracks when they were worn down to ½ inch across the tip. Now an inspector wants us to replace them when they're just a hair under one inch across.

Has the regulation on this changed and where can I find the new regulation?

SFC E. S.



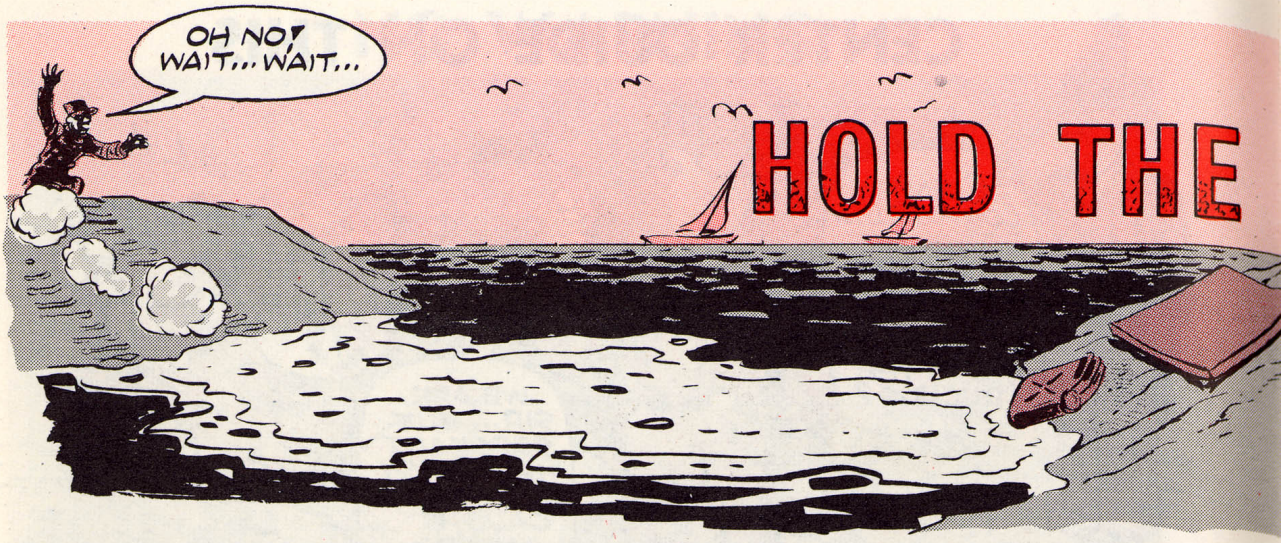
Dear Sergeant E.S.,

The latest regulation on wear limits for center guides is in TM 9-2630-200-14 (Oct 62).

You don't say whether the inspector was checking **depot issue** or a **line company.**

If it was depot issue, he's absolutely right. Center guides have to be at least 1 inch across for issue to using troops. On 'tuther hand, **using troops can wear 'em down to ½ inch before they need be replaced.**

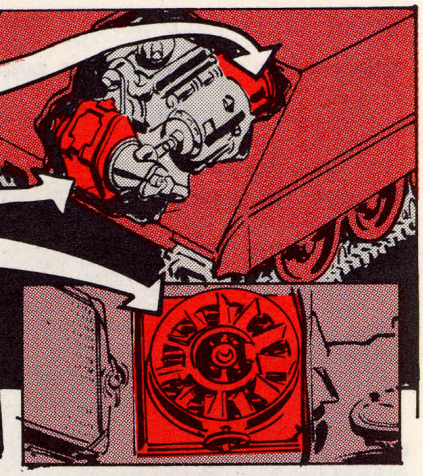
Half-Mast



Quick, now! You want to make sure you get any unpainted magnesium-alloy components on your M113 APC coated quick-like with a corrosive preventive compound (FSN 8030-526-1605)—especially if you're anywhere near salt water.

The spots that need this special protection are:

- TRANSFER CASE.
- DIFFERENTIAL.
- COOLING FAN HOUSING.



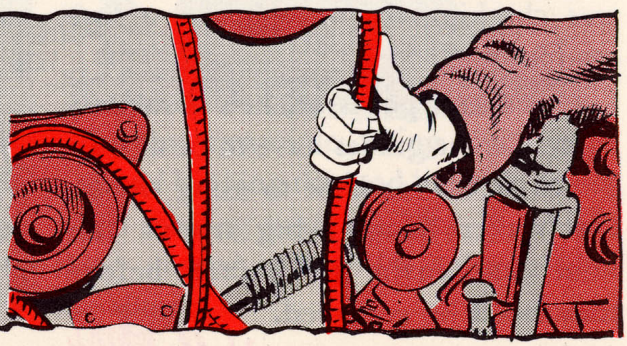
NOTE: This deal **does not** apply to the final drive inside covers—for special protection for them, get ahold of MWO 9-2300-224-20/10 (27 Nov 62).

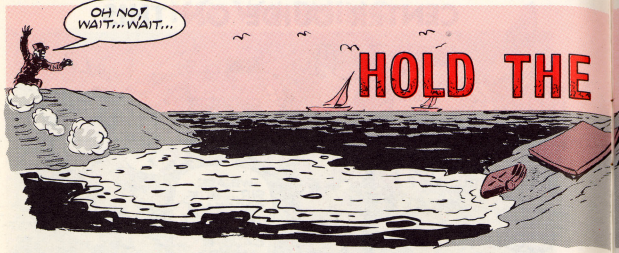
The chore takes a bit of work and effort, but it's worth every bit of it . . . 'cause even salt spray can eat away at those unpainted magnesium components.

To get the job done you have to open the rear engine compartment door, driver's compartment door, and the power plant door. Also, open the drain in the forward hull to get rid of any water.

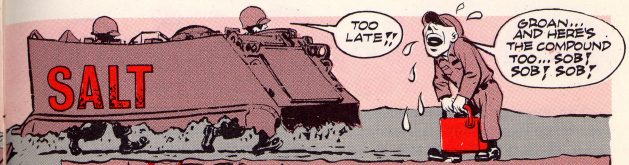
You tackle the operation like this:

1. Take off the fan belts and the generator drive belts (See pages 105 and 118, TM 9-2300-224-20).





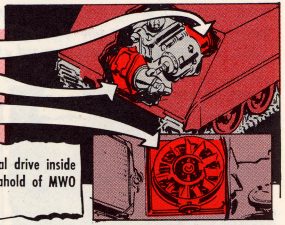
HOLD THE SALT



Quick, now! You want to make sure you get any unpainted magnesium-alloy components on your M113 APC coated quick-like with a corrosive preventive compound (FSN 8030-526-1605)—especially if you're anywhere near salt water.

The spots that need this special protection are:

- TRANSFER CASE.
- DIFFERENTIAL.
- COOLING FAN HOUSING.



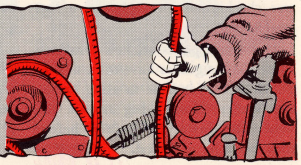
NOTE: This deal **does not** apply to the final drive inside covers—for special protection for them, get ahold of MWO 9-2300-224-20/10 (27 Nov 62).

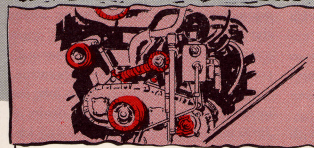
The chore takes a bit of work and effort, but it's worth every bit of it . . . 'cause even salt spray can eat away at those unpainted magnesium components.

To get the job done you have to open the rear engine compartment door, driver's compartment door, and the power plant door. Also, open the drain in the forward hull to get rid of any water.

You tackle the operation like this:

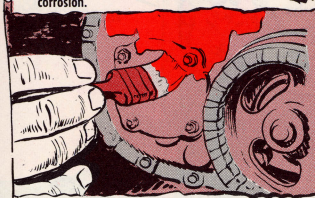
1. Take off the fan belts and the generator drive belts (See pages 105 and 118, TM 9-2300-224-20).





2. Carefully mask the differential steering brake yokes, shafts, breather, name plates, fan drive pulley, generator pulley, generator drive pulley, cooling fan tension pulley, spring, steering lever shaft, and engine disconnect control collar with masking tape (FSN 7510-266-6712).

3. Thoroughly clean the unpainted magnesium-alloy components with dry cleaning solvent (FSN 6850-336-8170). Make sure they're free of salt deposits, and use a stainless steel wire brush to clean off any corrosion.



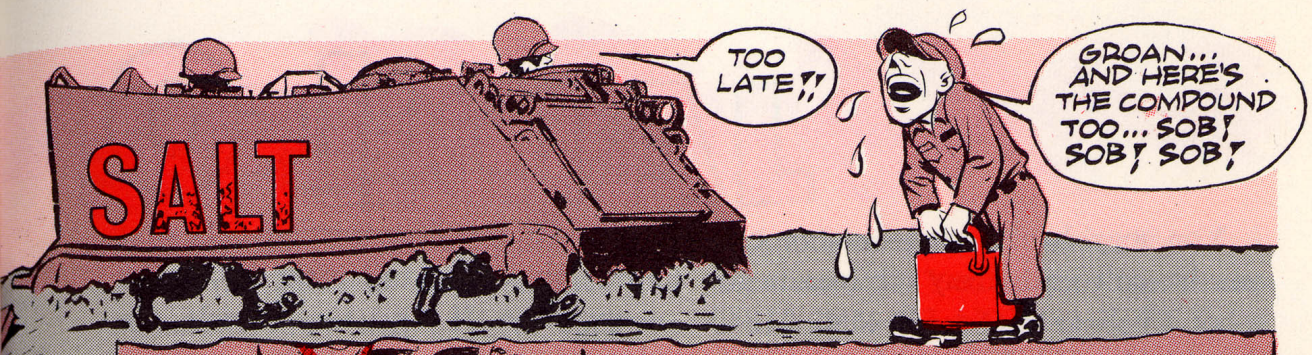
4. You apply the preservative compound with a brush (FSN 8020-260-1304). The coating shouldn't be over 0.002-inches thick. That's a real thin coat—and it needs to be thin because this stuff doesn't dry hard—it stays soft, runs if it's laid on too thick, and could then leave exposed spots. And, be sure to keep the stuff away from bearings and movable joints in the neighborhood.

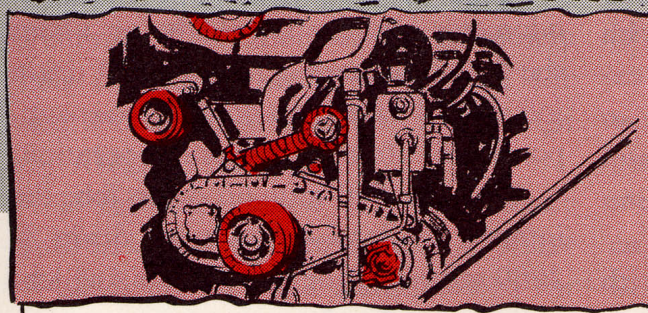
5. Let the coating dry for at least four hours before you remove the masking tape and put things back in proper order.

And, note: From now on you're to cock a careful eye at those magnesium-alloy components when you pull a quarterly, clean off any corrosion, and re-coat 'em with the preservative compound, if they need it.

Also, be sure to record this PM chore on your M113's maintenance log (DA Form 2408-3-1).

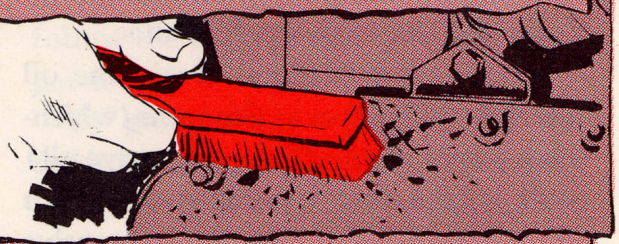
TB 9-2300-224-20/1 (30 Oct 62) is your authority for this important job, and, of course, LO 9-2300-224-10, para 6g tells you what to do when you've taken the M113 into salt water.

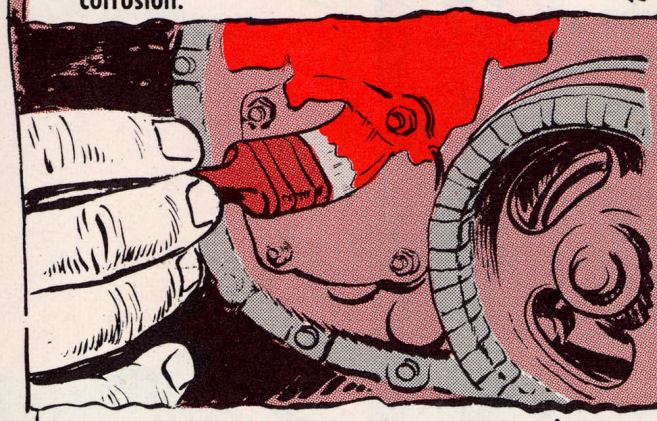




2. Carefully mask the differential steering brake yokes, shafts, breather, name plates, fan drive pulley, generator pulley, generator drive pulley, cooling fan tension pulley, spring, steering lever shaft, and engine disconnect control collar with masking tape (FSN 7510-266-6712).

3. Thoroughly clean the unpainted magnesium-alloy components with dry cleaning solvent (FSN 6850-336-8170). Make sure they're free of salt deposits, and use a stainless steel wire brush to clean off any corrosion.





4. You apply the preservative compound with a brush (FSN 8020-260-1304). The coating shouldn't be over 0.002-inches thick. That's a real thin coat—and it needs to be thin because this stuff doesn't dry hard—it stays soft, runs if it's laid on too thick, and could then leave exposed spots. And, be sure to keep the stuff away from bearings and movable joints in the neighborhood.

5. Let the coating dry for at least four hours before you remove the masking tape and put things back in proper order.

And, note: From now on you're to cock a careful eye at those magnesium-alloy components when you pull a quarterly, clean off any corrosion, and re-coat 'em with the preservative compound, if they need it.

Also, be sure to record this PM chore on your M113's maintenance log (DA Form 2408-3-1).

TB 9-2300-224-20/1 (30 Oct 62) is your authority for this important job, and, of course, LO 9-2300-224-10, para 6c tells you what to do when you've taken the M113 into salt water.

LO

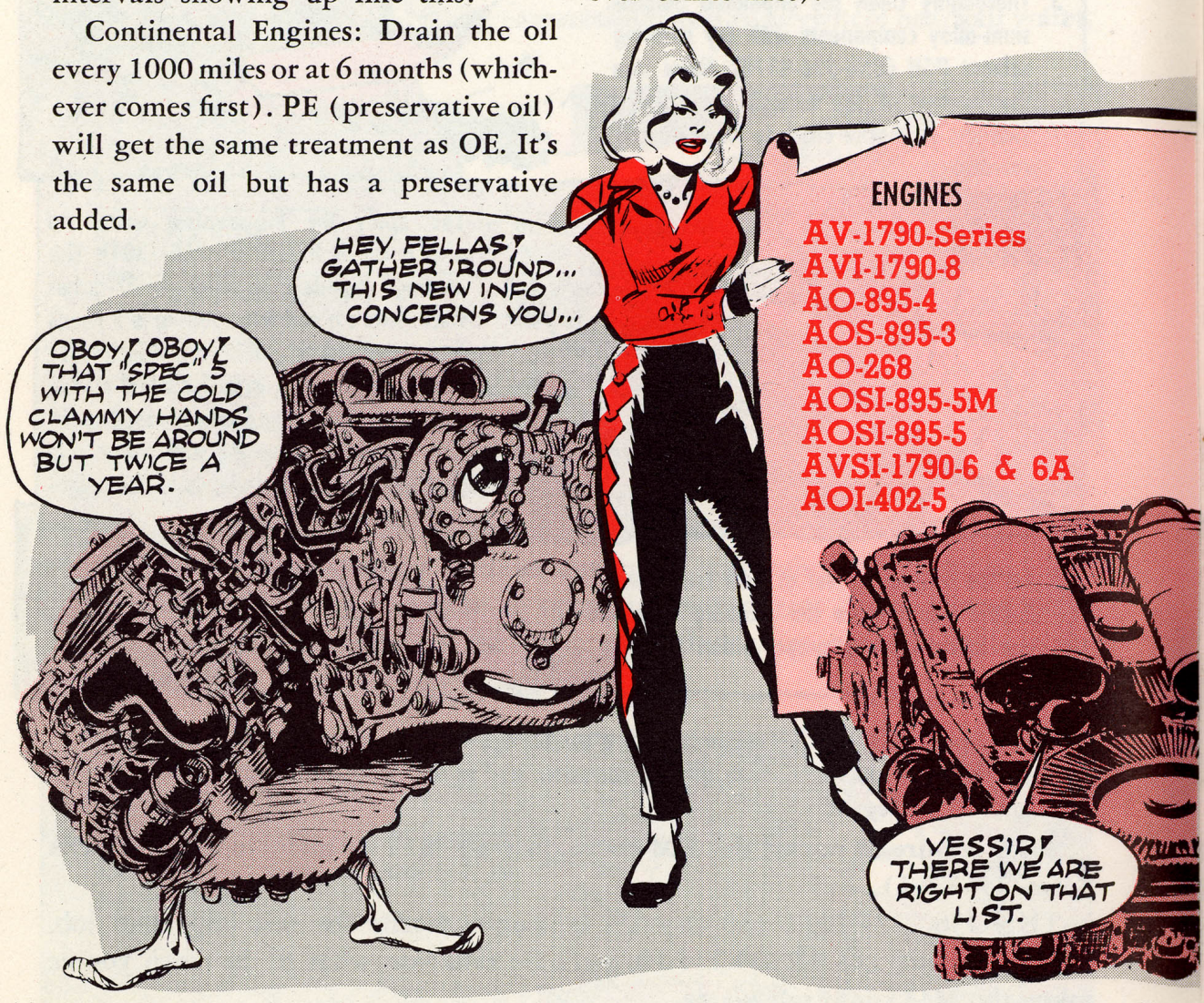
You may have heard—but in case you haven't—all Army commands got a hot TWX (SMOTA-FM MSG 01840 dated 1 Mar 63) that was shot out with some real important LO poop for extending the oil changing intervals in your tracked vehicles with Continental air-cooled engines and with Allison transmissions.

The LO's are getting changed, with intervals showing up like this:

Continental Engines: Drain the oil every 1000 miles or at 6 months (whichever comes first). PE (preservative oil) will get the same treatment as OE. It's the same oil but has a preservative added.

New Allison Transmissions: The first drain job would fall after 500 miles of operation. If it's a new vehicle, the odometer reading should be on about the 600-mile mark 'cause the first drain job should have been done by your support outfit after 100 miles of operation.

After the 500-mile oil drain job, the interval widens—your next drain is 2000 miles later or in 6 months (whichever comes first).



LO SPECIAL

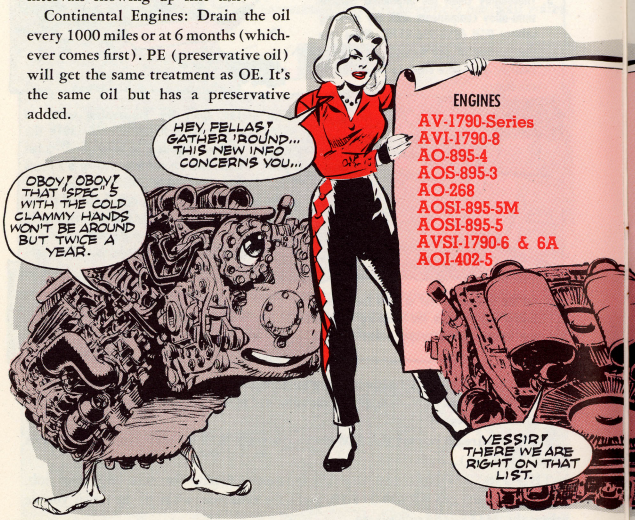
You may have heard—but in case you haven't—all Army commands got a hot TWX (SMOTA-FM MSG 01840 dated 1 Mar 63) that was shot out with some real important LO poop for extending the oil changing intervals in your tracked vehicles with Continental air-cooled engines and with Allison transmissions.

The LO's are getting changed, with intervals showing up like this:

Continental Engines: Drain the oil every 1000 miles or at 6 months (whichever comes first). PE (preservative oil) will get the same treatment as OE. It's the same oil but has a preservative added.

New Allison Transmissions: The first drain job would fall after 500 miles of operation. If it's a new vehicle, the odometer reading should be on about the 600-mile mark 'cause the first drain job should have been done by your support outfit after 100 miles of operation.

After the 500-mile oil drain job, the interval widens—your next drain is 2000 miles later or in 6 months (whichever comes first).



There'll be times when you operators (for the good of your engines and transmissions) will have to vary the intervals. Operation under extremely bad conditions means you check for contamination more often and change oil when necessary.

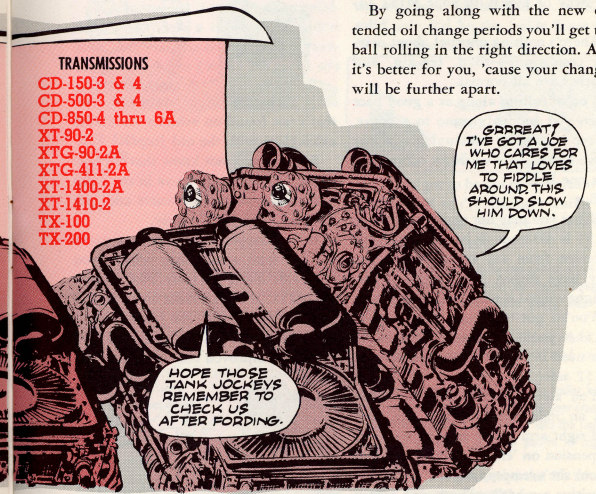
F'rinstance, when you deep-water ford in salt water—or even clear water—check engines and transmissions for water soonest. If there's any water . . . change the oil.

Another reason for varying the scheduled interval: You've got to make seasonal oil changes so the grade (weight) of oil agrees with the temperature.

The LO key clues you in on the weight of oil to use for a given temperature range.

If the LO keys for your Continental engines don't spell out the poop found in TB Ord 694, then you'll just hafta follow the poop in the TB . . . it's still good.

By going along with the new extended oil change periods you'll get the ball rolling in the right direction. And it's better for you, 'cause your changes will be further apart.



SPECIAL

There'll be times when you operators (for the good of your engines and transmissions) will have to vary the intervals. Operation under extremely bad conditions means you check for contamination more often and change oil when necessary.

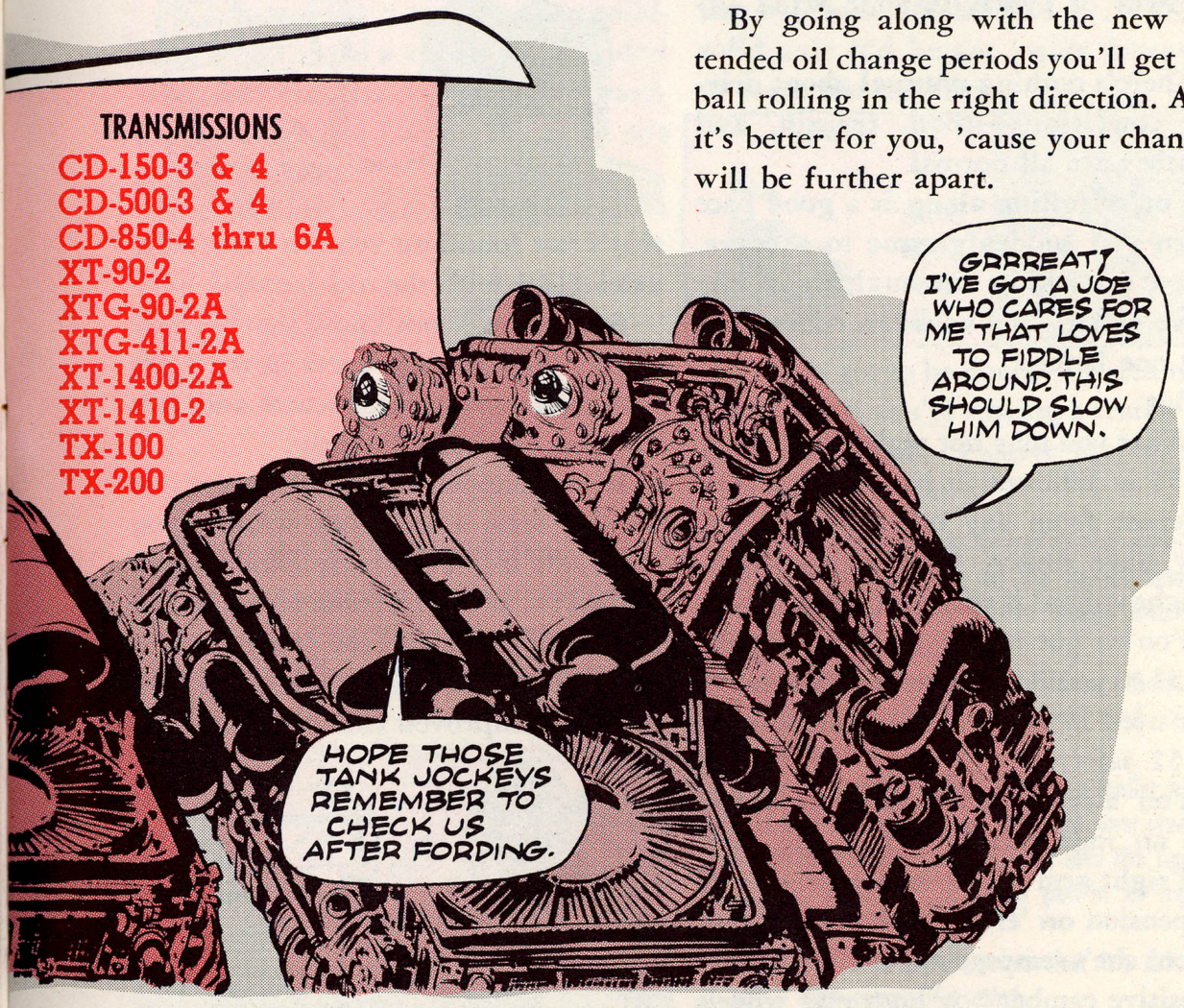
F'rinstance, when you deep-water ford in salt water—or even clear water—check engines and transmissions for water soonest. If there's any water . . . change the oil.

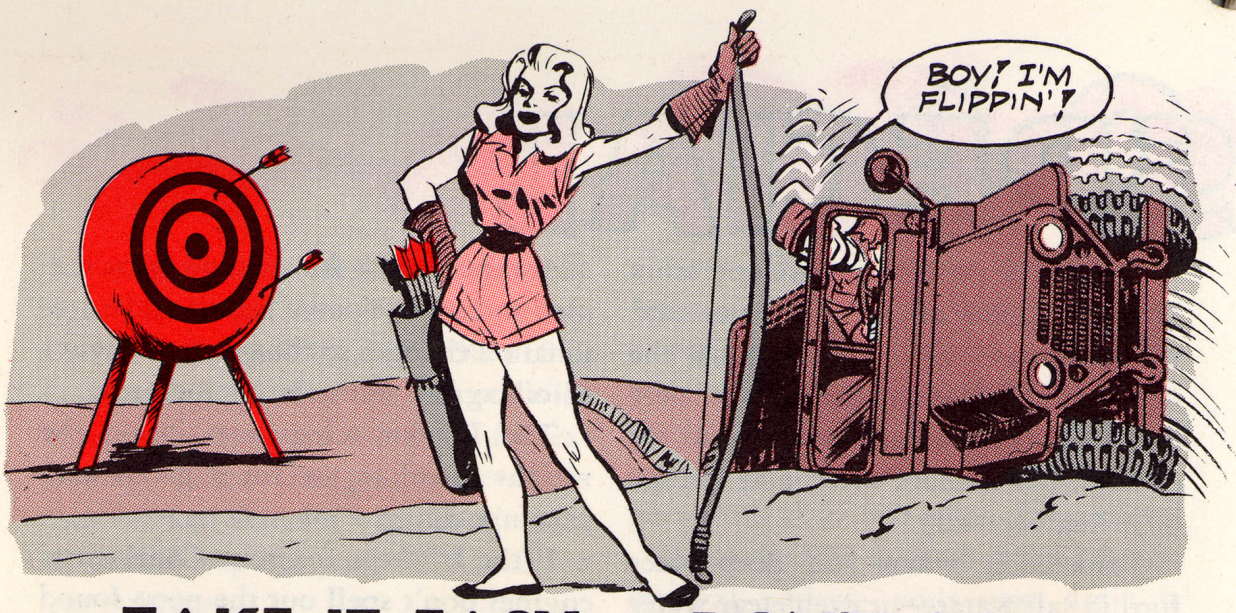
Another reason for varying the scheduled interval: You've got to make seasonal oil changes so the grade (weight) of oil agrees with the temperature.

The LO key clues you in on the weight of oil to use for a given temperature range.

If the LO keys for your Continental engines don't spell out the poop found in TB Ord 694, then you'll just hafta follow the poop in the TB . . . it's still good.

By going along with the new extended oil change periods you'll get the ball rolling in the right direction. And it's better for you, 'cause your changes will be further apart.





TAKE IT EASY — DON'T FLIP

You're making your way along some highway or byway in your M151 ¼-ton.

There's nothing unusual about driving conditions—road, terrain, and weather are all normal.

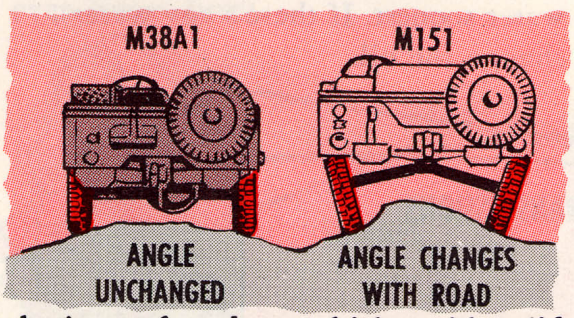
You're rolling along at a good pace when you suddenly come to a curve. There's nothing unusual about the curve either. You've taken curves like this one before.

But...

What you may not realize is that the M151 is different. It handles and feels different from any other vehicle you may have driven. This peppy, lightweight animal is still a stranger to you.

You've got to get the feel of your M151 so you'll pick up the driver savvy you need if you want to handle your M151 safely.

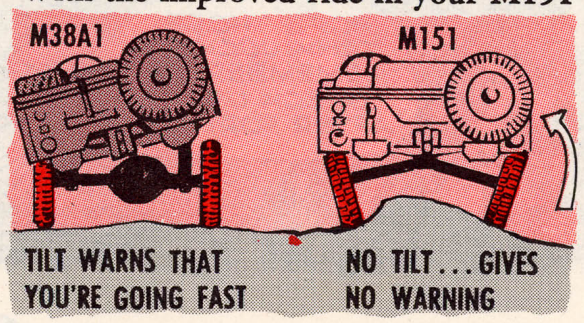
You already know that the M151 has an independent swing arm (left and right arm pivots near center) rear suspension on 'er. You also know that when she's empty, there's a definite "positive camber" on both rear wheels

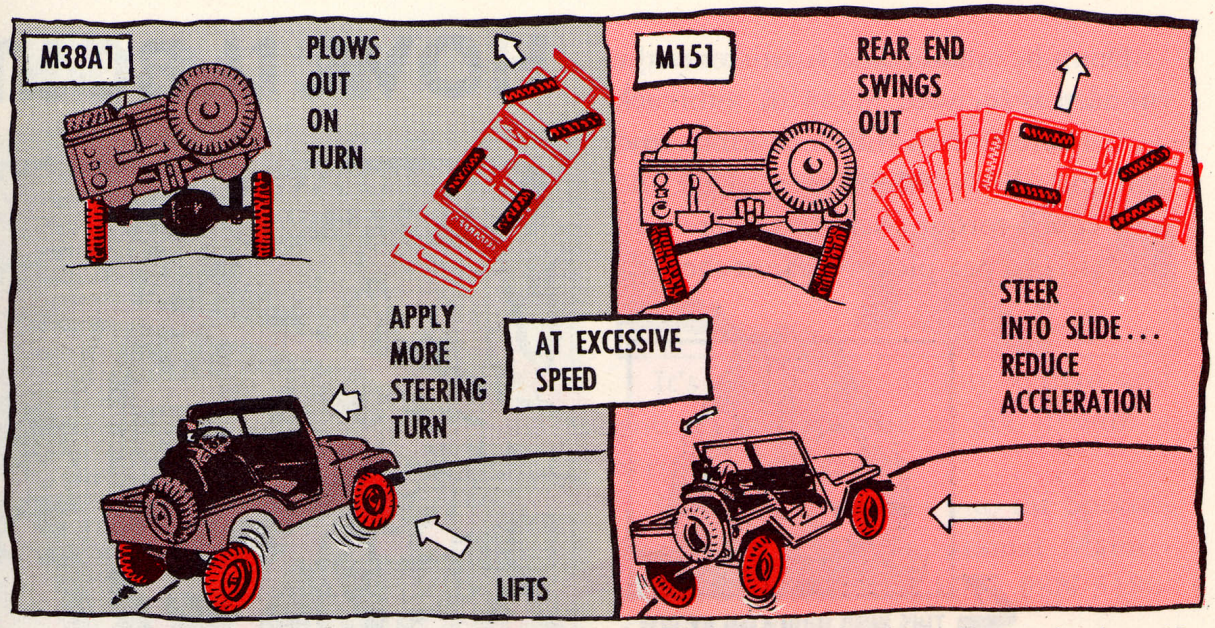


that's not found on vehicles with solid axles (like with the old Jeeps).

But you may not know that because of the inherent differences in the axles that each type vehicle reacts and gets handled mucho differently.

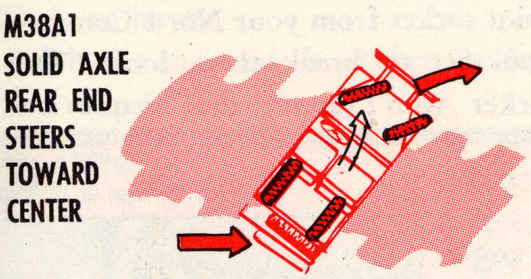
If you happen to be taking a curve too fast with a solid-axle vehicle, you get a side tilt of the body. Not so with the M151. It stays almost level. By the body tilting (like on the Jeep) you get a warning that you're going too fast. With the improved ride in your M151



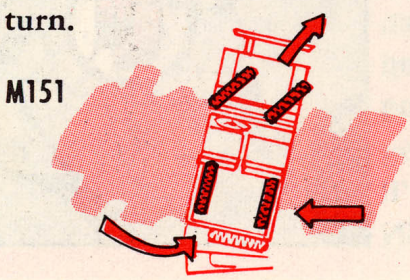


you don't get the tilt which means you don't get the warning.

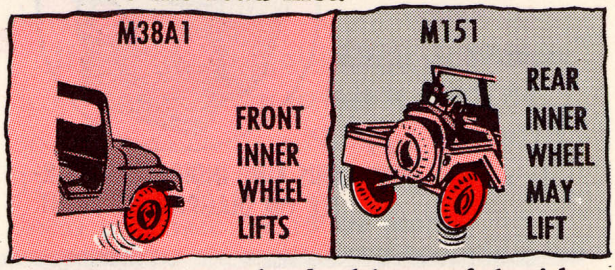
While making a curve with a solid-axle type there's a tendency to understeer 'em, and you correct this by turning 'er more into (with) the curve so's to roll with it.



Again the M151 is different. When takin' the curve she tends to over-steer (the rear end steers out and away from the circle). The correction for this is to let up on the foot pedal and turn the wheels so they're headed slightly *out of* the turn.



You may not even know it, but if your speed is too fast, your rear inside tire will raise off the road . . . with the solid axle it'd be the inside front tire to leave the road first.



You've got to be doubly careful with the curves if you're towing a trailer . . . the trailer tends to shove the M151's rear end even more.

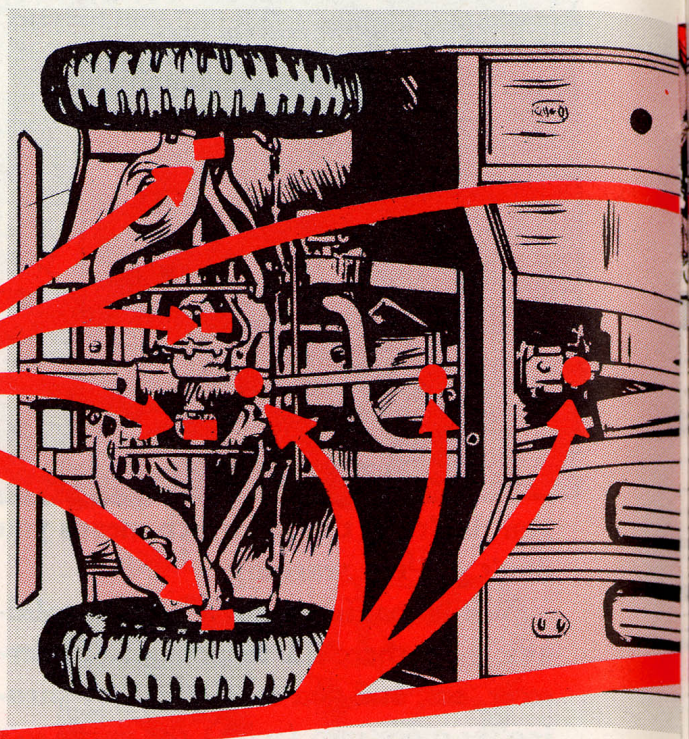
Here are some things to be real careful about—

1. Keep an eye glued on the speedometer, particularly when you're going into a turn. Slow down.
2. Drive an empty M151 slower than a loaded one under the same road conditions.
3. Be real careful when towing a trailer because it'll cause your M151 to over-steer.
4. When you pass, come back into the right lane gradually. A sharp pull-in at high speed could flip you.

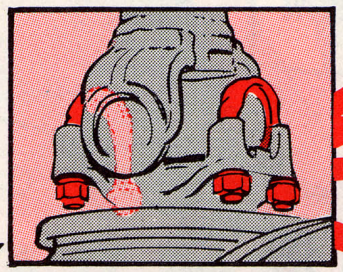
With your M151, remember that it's driver savvy that counts the most.

HOW U-BOLT

Don't be mussin' and fussin' over the connectors for your M151 ¼-ton truck . . . There're two different kinds and you gotta know which goes where and how much torque each gets. Here's all the info in a pea-pickin' peanut shell....

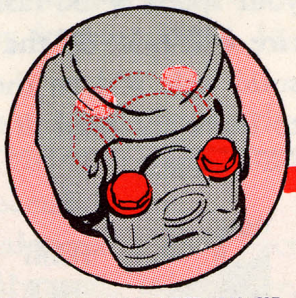


6 LOCATIONS
12 U-BOLTS
24 NUTS GET
15-20 FT-LBS



THIS KIND INDICATED BY BOX ON DIAGRAM AT RIGHT.

6 LOCATIONS
24 CAPSCREWS
(12-POINT)
GET 28-33 FT-LBS



THIS KIND INDICATED BY CIRCLE ON DIAGRAM AT RIGHT.

Now about torquing these cap screws . . . Don't try to use the old 12-point socket from your No. 1 Common Tool Set to break them loose. This socket won't stand the torque and

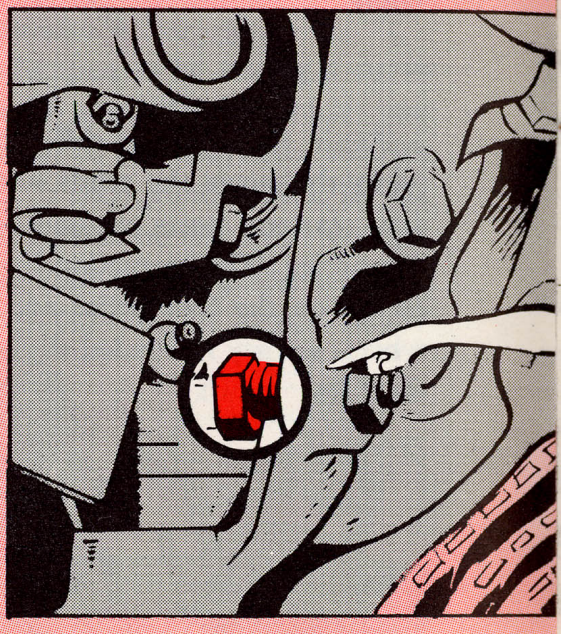
OFF

Don't touch it! It's an "OFF LIMITS" job to you organizational mechanics and drivers. The adjusting of the wheel turning radius (angle) on your M151 ¼-ton truck adds up to just one thing . . . leave it up to support!

'Course, it's up to you to let support know that you're getting erratic steering outta your M151.

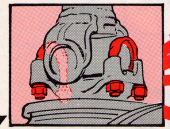
When you find your M151's steering wheel won't return—or it will turn much sharper one way than t'other—then you'd better figure something is wrong. Once it's handed over to support, they'll give a lot of attention to all the steering column linkage adjustments before even looking at the adjustment on the turn-radius stop-screw.

Once the linkage is adjusted, then's when they'll use their special tool, Wheel Indicator (FSN



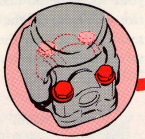
HOW U-BOLT THE M151

Don't be mussin' and fussin' over the connectors for your M151 ¼-ton truck . . . There're two different kinds and you gotta know which goes where and how much torque each gets. Here's all the info in a pea-pickin' peanut shell....



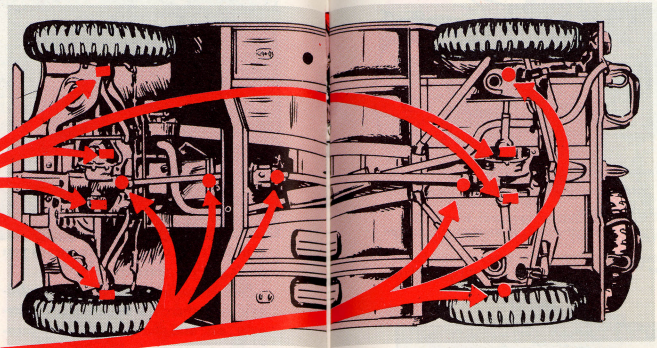
6 LOCATIONS
12 U-BOLTS
24 NUTS GET
15-20 FT-LBS

THIS KIND INDICATED BY BOX ON DIAGRAM AT RIGHT.



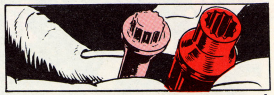
6 LOCATIONS
24 CAPSCREWS
(12-POINT)
GET 28-33 FT-LBS

THIS KIND INDICATED BY CIRCLE ON DIAGRAM AT RIGHT.



Now about torquing these cap screws . . . Don't try to use the old 12-point socket from your No. 1 Common Tool Set to break them loose. This socket won't stand the torque and you'll chew up its insides. Ditto for any other 5/16-in 12-point socket you're likely to have.

What you need is socket, socket wrench, 5/16-in heavy duty, ⅜-in square drive, socket. The stock number for this 12-point, thin walled (or tapered) socket is FSN 5120-893-0064.



It's now in the supply system and you should be able to get it with a written justification.

It has also been put into the Special, Basic, Set B, Organizational Maintenance Tool Kit. This kit is FSN 5180-627-7049 (7365054).

You might be able to borrow the socket from support because Change 1 to SM 9-4-5180-V20 (Nov 61) authorized it for 3rd and 4th echelon tool kits.

If you can't requisition it or borrow it, you might want to buy it. APX 0425 socket wrench Part Number HC-2010-D or equal is what you ask for at the local purchase hardware store.

OFF LIMITS

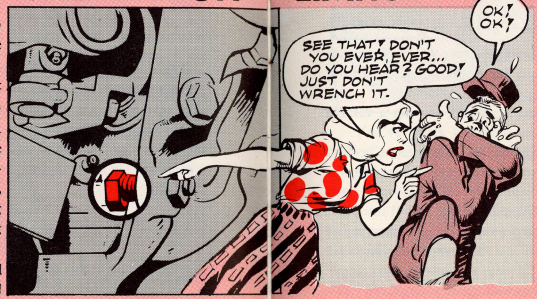
Don't touch it! It's an "OFF LIMITS" job to you organizational mechanics and drivers.

The adjusting of the wheel turning radius (angle) on your M151 ¼-ton truck adds up to just one thing . . . leave it up to support!

'Course, it's up to you to let support know that you're getting erratic steering outta your M151.

When you find your M151's steering wheel won't return—or it will turn much sharper one way than t'other—then you'd better figure something is wrong. Once it's handed over to support, they'll give a lot of attention to all the steering column linkage adjustments before even looking at the adjustment on the turn-radius stop-screw.

Once the linkage is adjusted, then's when they'll use their special tool, Wheel Indicator (FSN 4910-221-2472), to adjust the stop so's to get a maximum 31° turning radius . . . no more.

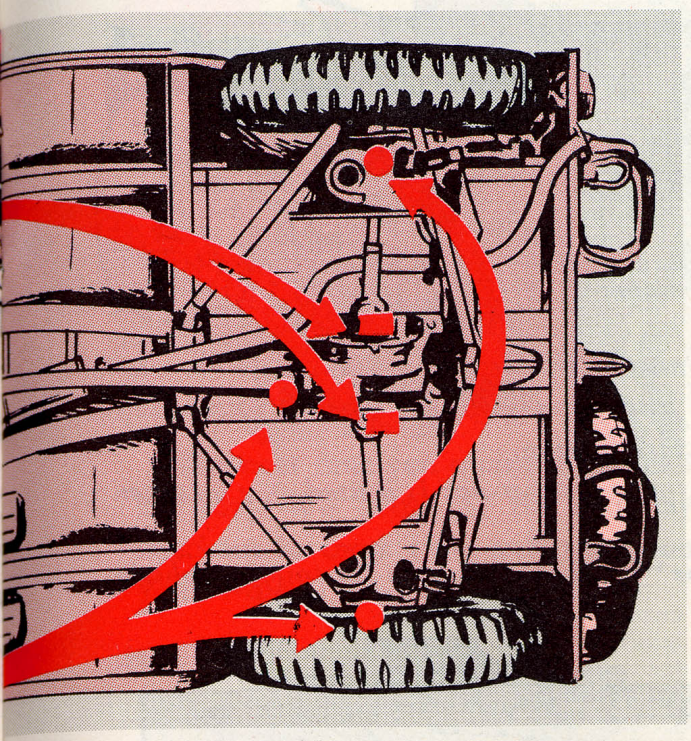


Get to know these wheel-radius stop-screws so you don't make a mistake and put a wrench on them when you're going over those other body or frame bolts and nuts when doing your PM services. They may look like "they" need some tightenin' up, but you just treat 'em like they had the measles . . . don't go near 'em.

Here's why—if the stop-screws get screwed in all the way, the turn-radius is increased. A sudden impact on the wheels while they're in a sharp turn position will do dirt to the gears in the steering gear case.

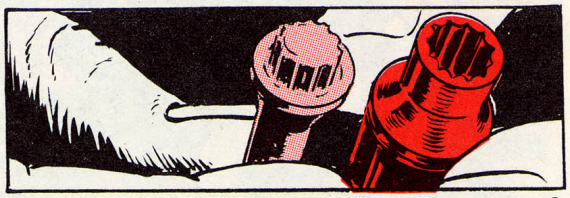
Just remember . . . it's a support job.

THE M151



you'll chew up its insides. Ditto for any other 5/16-in 12-point socket you're likely to have.

What you need is socket, socket wrench, 5/16-in heavy duty, 3/8-in square drive, socket. The stock number for this 12-point, thin walled (or tapered) socket is FSN 5120-893-0064.



It's now in the supply system and you should be able to get it with a written justification.

It has also been put into the Special, Basic, Set B, Organizational Maintenance Tool Kit. This kit is FSN 5180-627-7049 (7365054).

You might be able to borrow the socket from support because Change 1 to SM 9-4-5180-V20 (Nov 61) authorized it for 3rd and 4th echelon tool kits.

If you can't requisition it or borrow it, you might want to buy it. APX 0425 socket wrench Part Number HC-2010-D or equal is what you ask for at the local purchase hardware store.

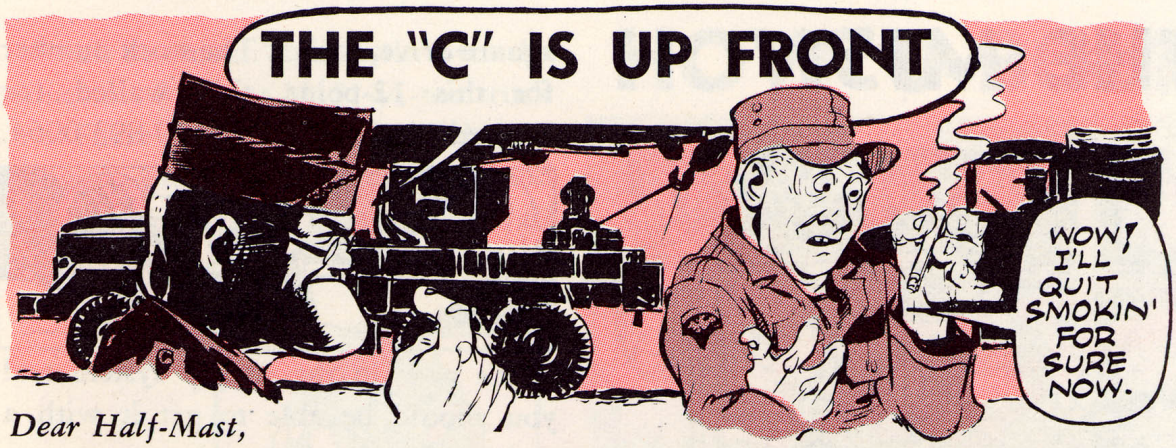
LIMITS

4910-221-2472), to adjust the stop so's to get a maximum 31° turning radius . . . no more.

Get to know these wheel-radius stop-screws so you don't make a mistake and put a wrench on them when you're going over those other body or frame bolts and nuts when doing your PM services. They may look like "they" need some tightenin' up, but you just treat 'em like they had the measles . . . don't go near 'em.

Here's why—if the stop-screws get screwed in all the way, the turn-radius is increased. A sudden impact on the wheels while they're in a sharp turn position will do dirt to the gears in the steering gear case.

Just remember . . . it's a support job.



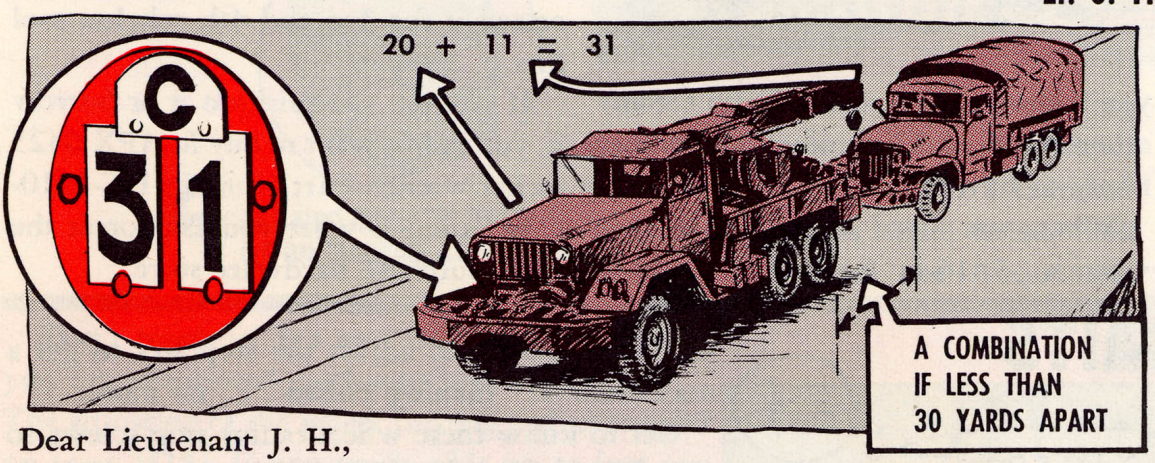
Dear Half-Mast,

What does a "vehicle combination" mean? The term's not listed in the dictionary of terms, and we've got a little discussion going on when it's necessary to display the "C" along with weight classification.

For example, is the "C" used on a tractor-trailer set-up? Is it used on a wrecker towing a vehicle or a weapon?

And, are the combined weight and the "C" shown on both the towing vehicle and the towed piece?

Lt. J. H.



Dear Lieutenant J. H.,

Any time you've got a self-propelled vehicle towing another vehicle (or other piece of equipment), you've got a combination, as far as weight classification info is concerned, unless they're more than 30 yards apart.

A tractor-trailer is a combination vehicle. Ditto a wrecker towing a vehicle (or any other piece of equipment).

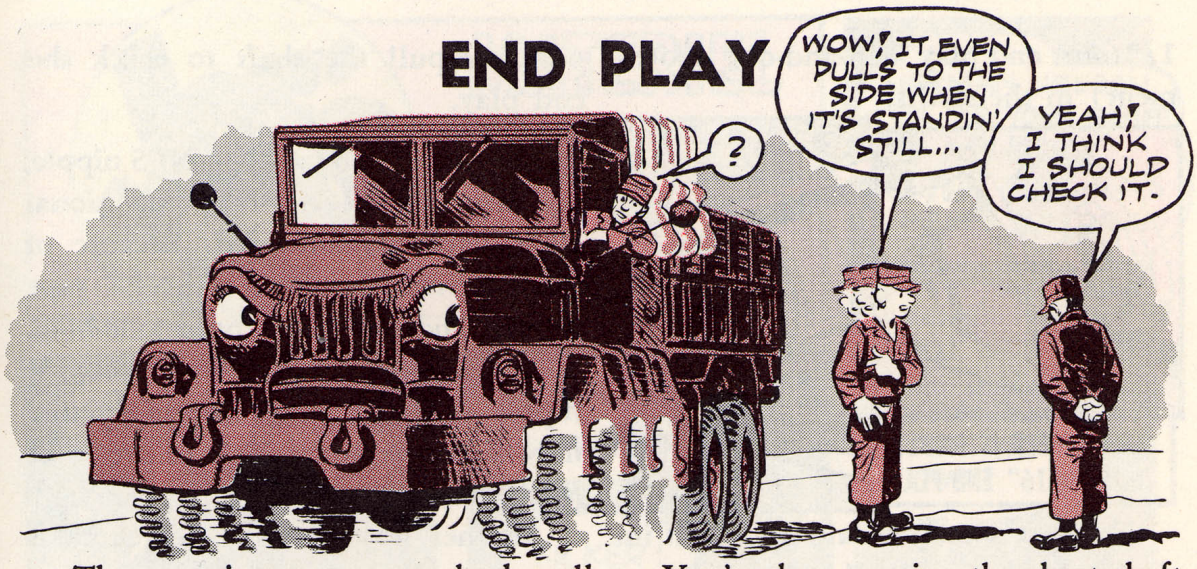
AR 746-2300-1, "Marking and Packing of Supplies and Equipment," (Section IV, para 13) says all self-propelled vehicles towing other vehicles or equipment will show the combined classification and display the "C". Also see para 73a (2), FM 5-36, "Route Reconnaissance and Classification."

The "C" is used on the front of the towing vehicle only. The classification of the towed item isn't changed . . . it gets no "C" . . . it shows only its basic classification.

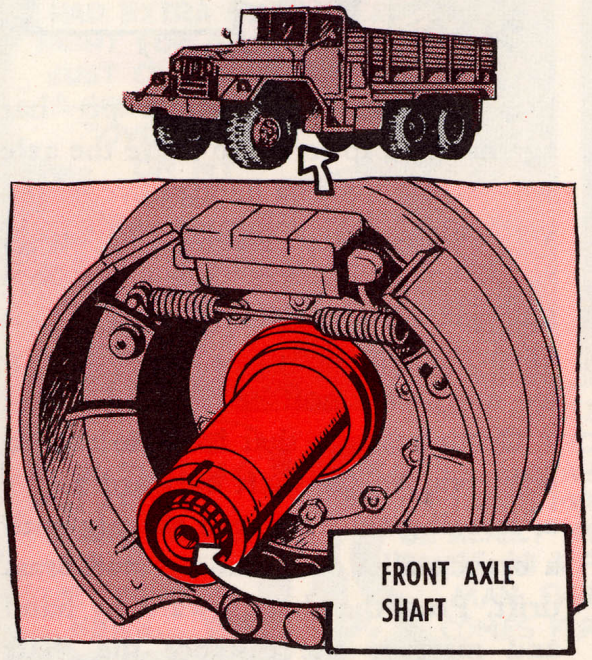
See TB 9-263 (14 Apr 59) for info on marking kits.

Half-Mast

END PLAY



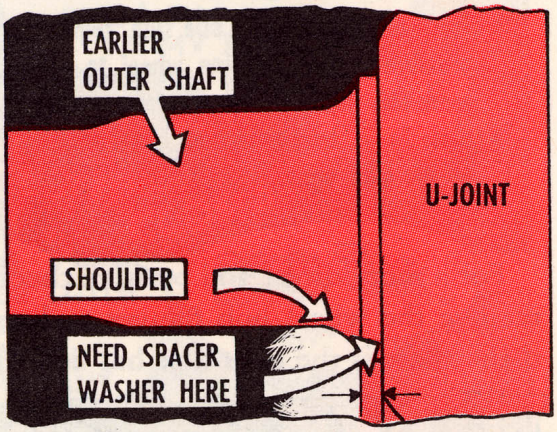
The next time you quarterbacks call the play, it'd better be the end play checkout in those front-axle shafts on your 5-ton G744-series trucks.



You've gotta be right on the ball when putting the assemblies onto your truck's steering knuckles or there'll be too much end play in the joints—the U-joint'll find itself off-center in relation to the kingpin, causing the steering to bind and even lock up. If this happens, you or the next guy at the wheel can get hurt or bang things up bad.

You've been getting the short shaft under FSN 2520-734-6985 and the long shaft under FSN 2520-734-6984—but what you didn't know is that these FSN's can bring you two different type shaft assemblies.

The earlier shafts have a shoulder on the outer shaft (next to the U-joint)



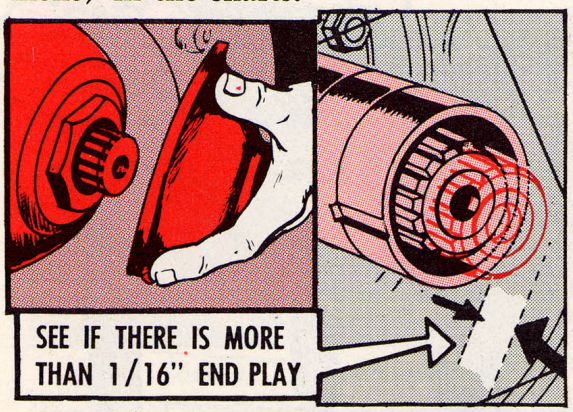
and need a spacer, washer, (FSN 5310-033-6007) for correct play in the unit.

Later production shafts have no shoulder—when you use them, they don't take the washer. Anytime the later shafts get replaced by the earlier one, get the spacer washer on that shoulder next to the U-joint.

To make sure the steering setup is OK in your 5-tonners, you'll hafta check to see if there is no more than

P.S. MORE

1/16-in end play (in-and-out movement) in the shafts.



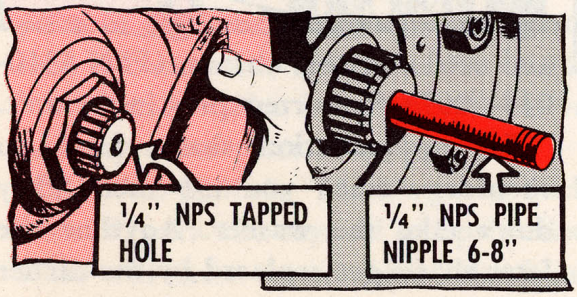
Here are some tell-tale signs that indicate the spacing washer is missing or the end play is more than 1/16 inch.

1. Too much front tire wear.

2. A cracking noise in the front axle while the truck is driving at slow speeds in a sharp turn.

3. Truck tends to pull to one side, requiring pressure on the steering wheel to overcome this side pull, snaps loose and steers okay for a short time then begins pulling to the side again.

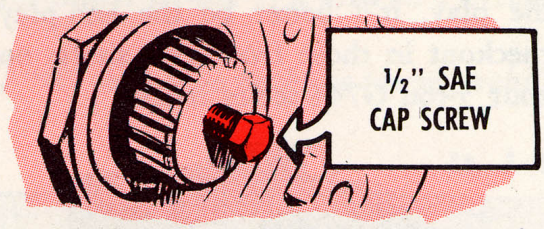
For a more direct and positive check, remove the wheel hub flanges and see if the shaft is the type that has a ¼-in



NPS (National Pipe Straight) tapped hole in its end. If so, get a ¼-in NPS pipe nipple about 6 to 8 inches long, and screw it into the tapped hole. Use this pipe extension as a hand-hold to push-and-pull the shaft to check the end play.

If you can't find a ¼-in NPS nipple, try one that's ¼-in NPT (National Pipe Tapered) threaded. Because of the difference between the NPT pipe threads and the NPS tapped axle-hole, take it easy when screwing the pipe nipple into the axle. Over-tightenin' may cause the pipe nipple to break off in the axle.

Another way to make this check is to screw a ½-inch SAE cap screw into

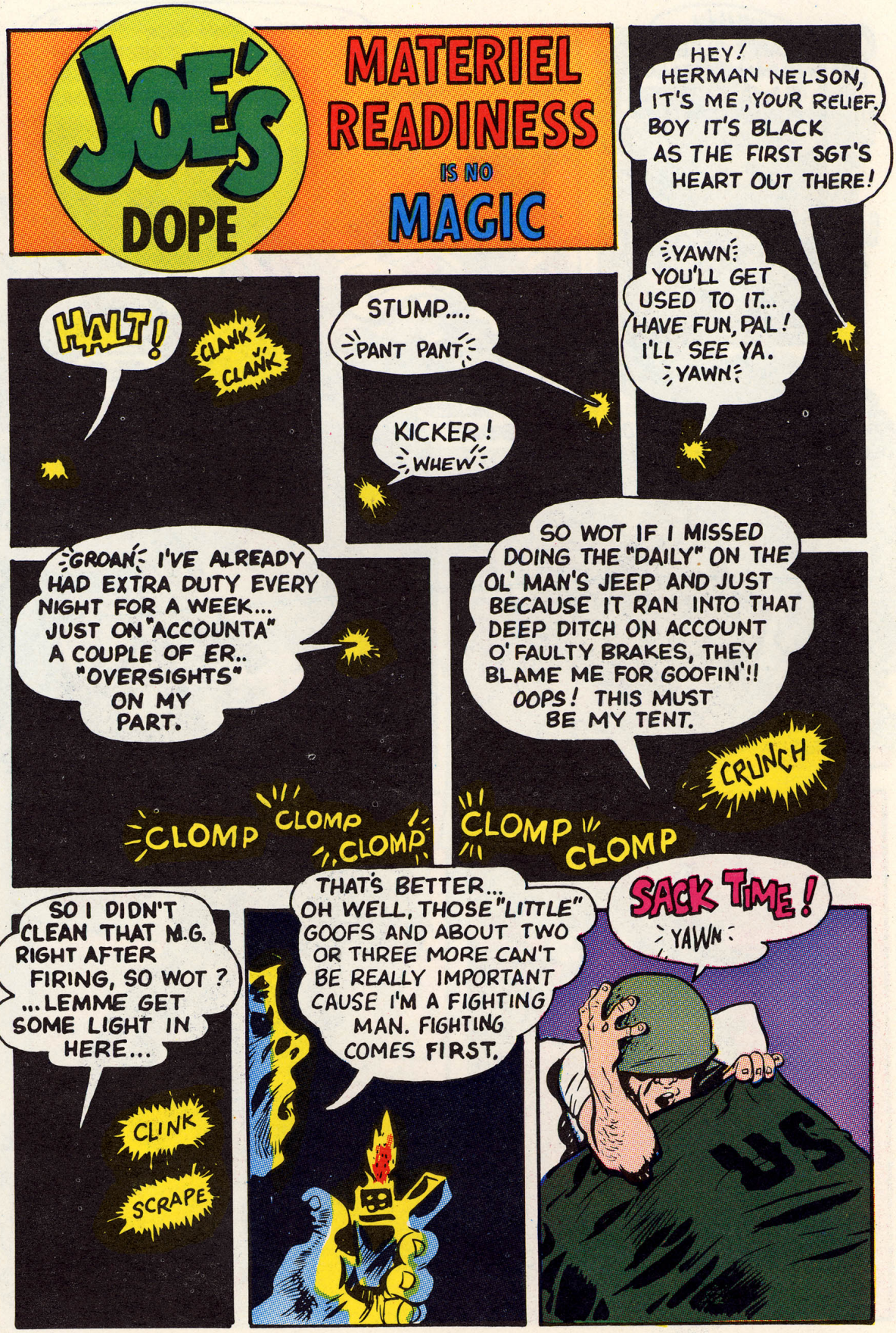


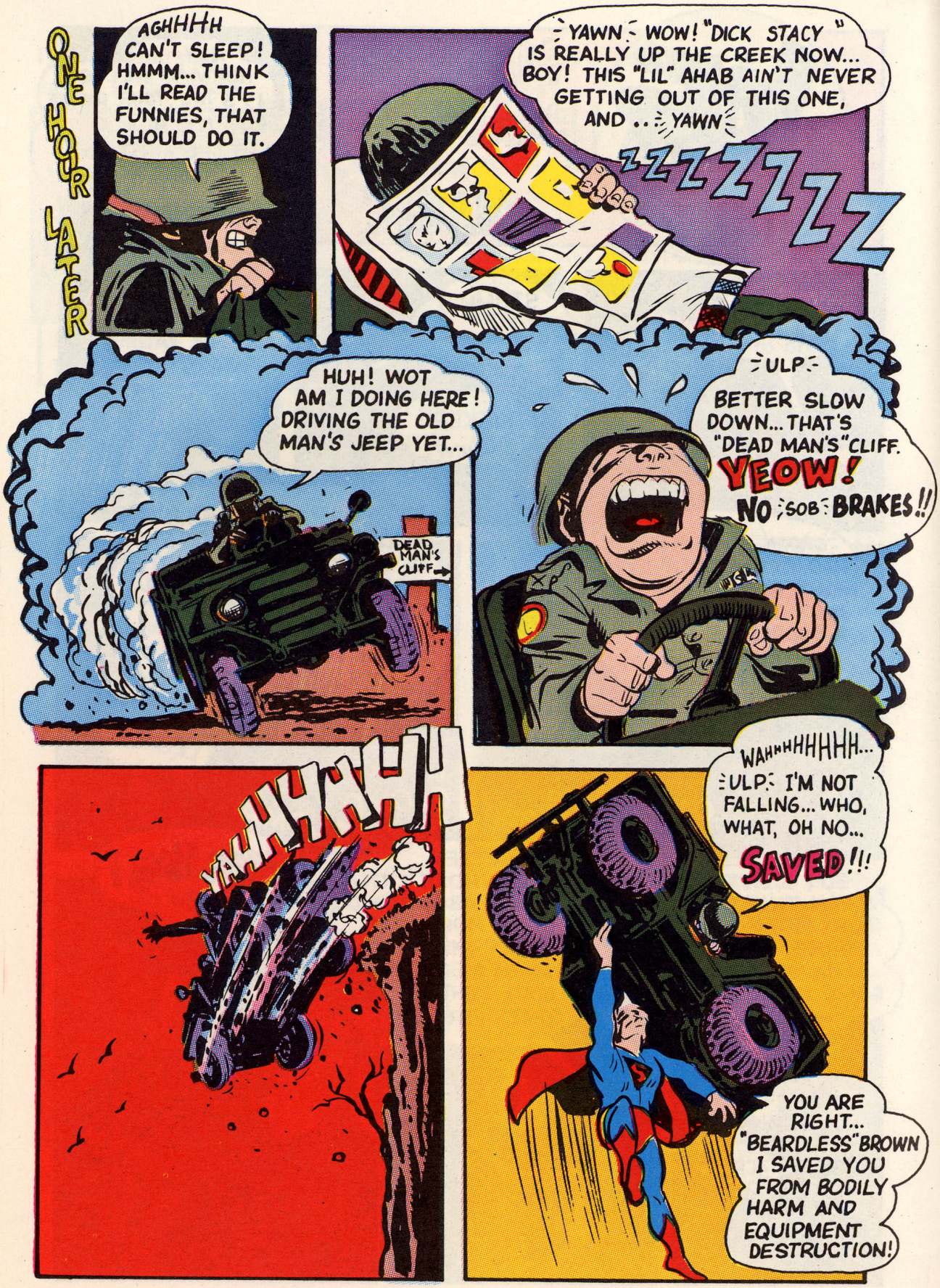
the axle-hole. Then use a pry bar against the cap screw to move the axle out—then in with a hand shove. If the axle can be moved beyond 1/16 inch, you'll know that the washer has been left out of an earlier type shaft, or whatever type shaft you've got is worn too much and must be replaced.

On axle shafts that have no tapped hole, bounce the shaft outward as far as it will go . . . strike it sharply with a brass mallet or a hammer and brass drift. Press the shaft inward by hand and measure the distance the shaft moves.

In all cases, the end play should not be more than 1/16 inch. After you make your check, replace the old flange gasket (FSN 2530-734-6993) if it looks like it needs it.

This is a big animal you're playing with and the better she steers, the better for you.


JOE'S DOPE
MATERIEL READINESS IS NO MAGIC
HEY! HERMAN NELSON, IT'S ME, YOUR RELIEF. BOY IT'S BLACK AS THE FIRST SGT'S HEART OUT THERE!
YAWN YOU'LL GET USED TO IT... HAVE FUN, PAL! I'LL SEE YA. YAWN
HALT!
CLANK CLANK
STUMP....
PANT PANT
KICKER!
WHEW
GROAN I'VE ALREADY HAD EXTRA DUTY EVERY NIGHT FOR A WEEK... JUST ON "ACCOUNTA" A COUPLE OF ER.. "OVERSIGHTS" ON MY PART.
CLOMP CLOMP CLOMP
SO WOT IF I MISSED DOING THE "DAILY" ON THE OL' MAN'S JEEP AND JUST BECAUSE IT RAN INTO THAT DEEP DITCH ON ACCOUNT O' FAULTY BRAKES, THEY BLAME ME FOR GOOFIN'!! OOPS! THIS MUST BE MY TENT.
CRUNCH
CLOMP CLOMP
SO I DIDN'T CLEAN THAT M.G. RIGHT AFTER FIRING, SO WOT? ...LEMME GET SOME LIGHT IN HERE...
CLINK
SCRAPE
THAT'S BETTER... OH WELL, THOSE "LITTLE" GOOFS AND ABOUT TWO OR THREE MORE CAN'T BE REALLY IMPORTANT CAUSE I'M A FIGHTING MAN. FIGHTING COMES FIRST.
SACK TIME! YAWN
US


ONE HOUR LATER
AGHHHH CAN'T SLEEP! HMMM... THINK I'LL READ THE FUNNIES, THAT SHOULD DO IT.
YAWN WOW! "DICK STACY" IS REALLY UP THE CREEK NOW... BOY! THIS "LIL" AHAB AIN'T NEVER GETTING OUT OF THIS ONE, AND .. YAWN
ZZZZZZZZ
HUH! WOT AM I DOING HERE! DRIVING THE OLD MAN'S JEEP YET...
DEAD MAN'S CLIFF
ULP BETTER SLOW DOWN... THAT'S "DEAD MAN'S" CLIFF. YEOW! NO SOB BRAKES!!
YAHHHHHH
WAHHHHHHHH... ULP I'M NOT FALLING... WHO, WHAT, OH NO... SAVED!!!
YOU ARE RIGHT... "BEARDLESS" BROWN I SAVED YOU FROM BODILY HARM AND EQUIPMENT DESTRUCTION!

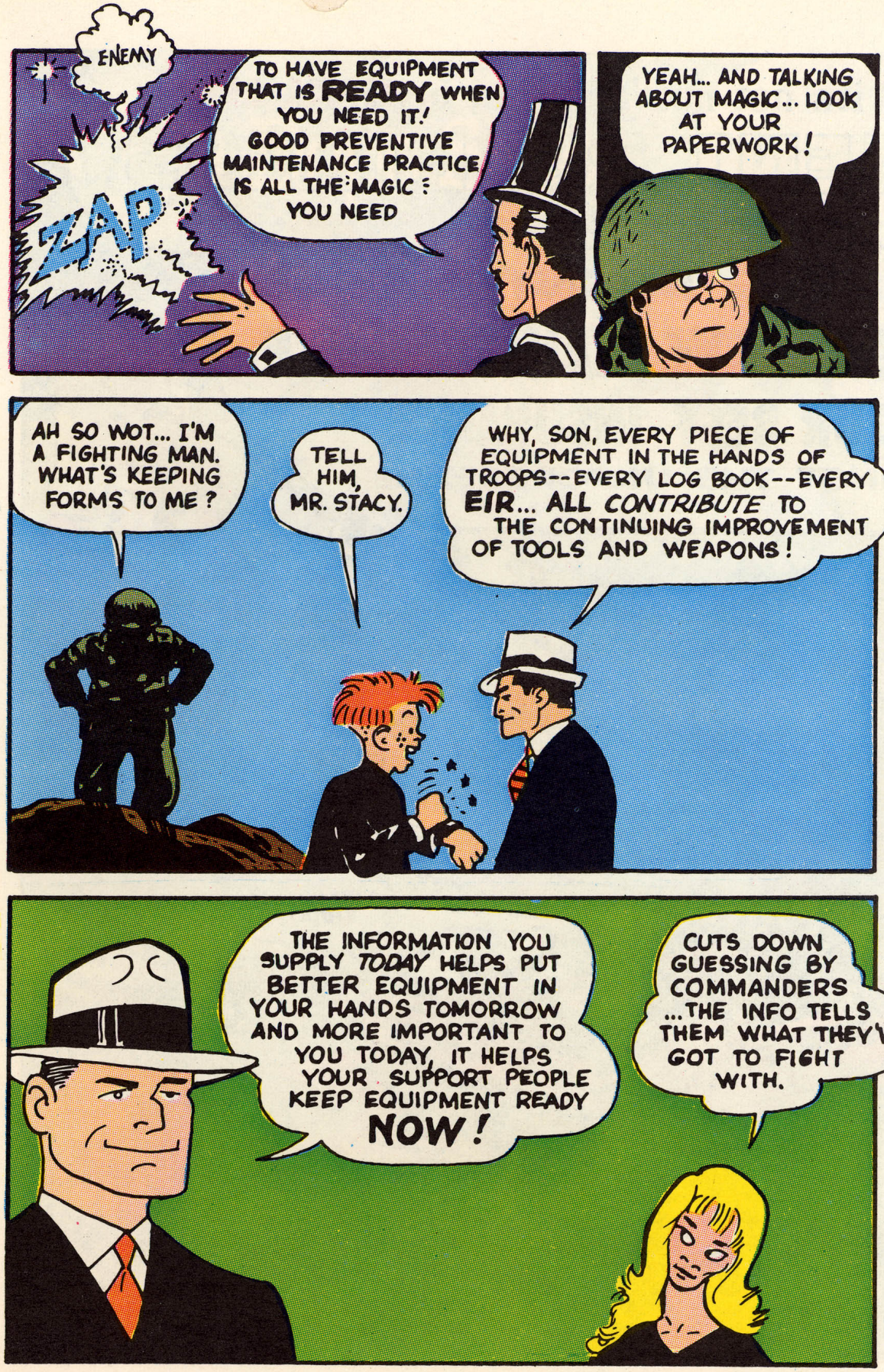
PREVENTIVE MAINTENANCE IS PART OF SAFETY, SO EVERYONE HAS A STAKE... EVEN IF YOU'RE A SUPERMAN, REMEMBER YOUR BUDDIES...
QUIET!! YOU'LL BRING THE WHOLE OUTFIT DOWN ON ME... Y'WANTA KICK INNA SHINS!?
GIT...
OW!!
QUIET, NELSON! YOU GOT NIGHTMARES OR SOMETHIN'?
HEY! WHERE DID THIS M.G. COME FROM? WHERE AM I?
POW! POW! POW! POW!
EEEEEK!!
THOSE GUYS COMING UP THE DRAW ARE SHOOTING AT ME!! GOTTA SQUEEZE OFF A FEW TO SLOW EM DOWN.
YIPE IT'S JAMMED
READ THIS PINUP OLD BOY WHILE I RESCUE YOU.

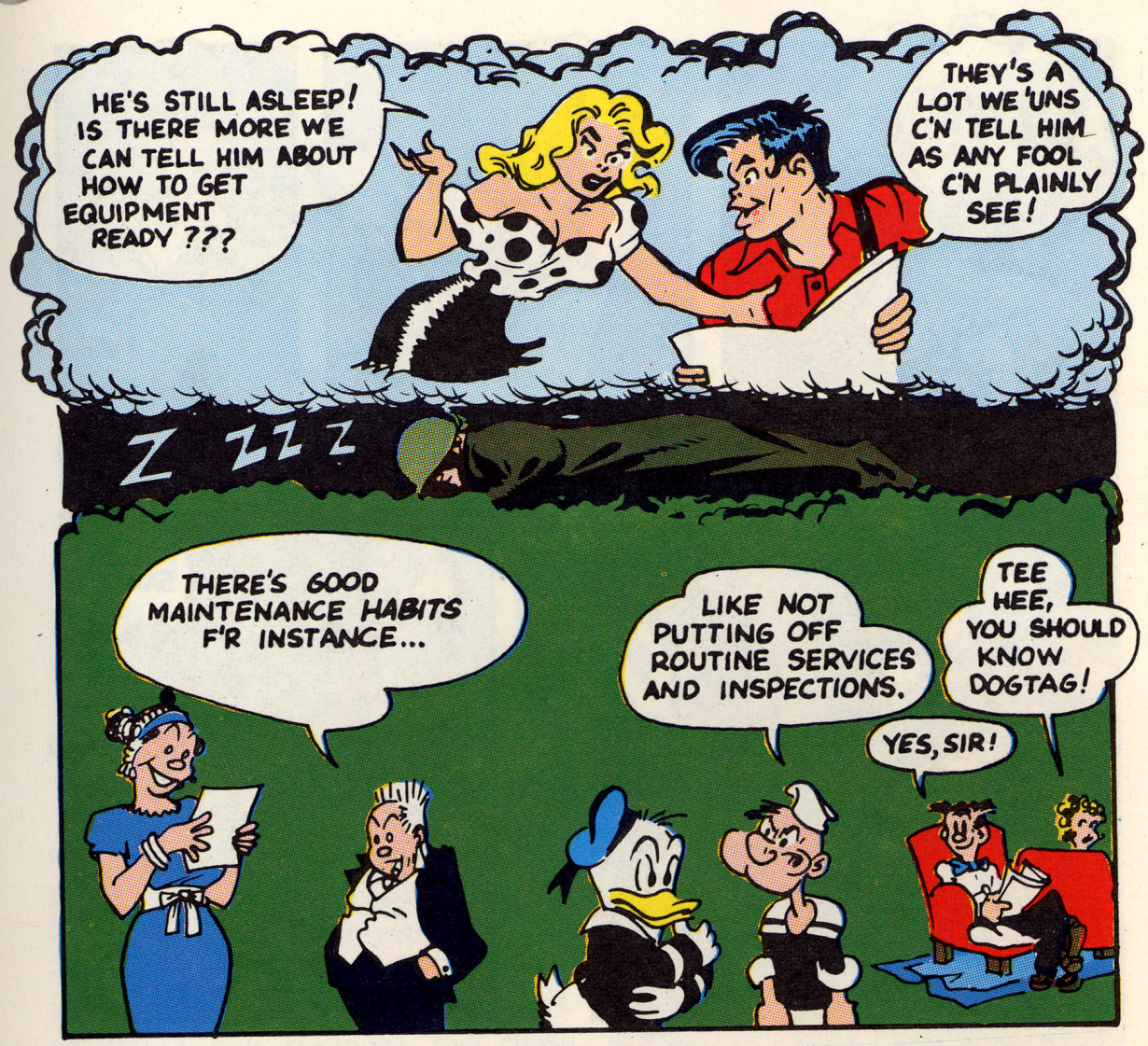
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR B

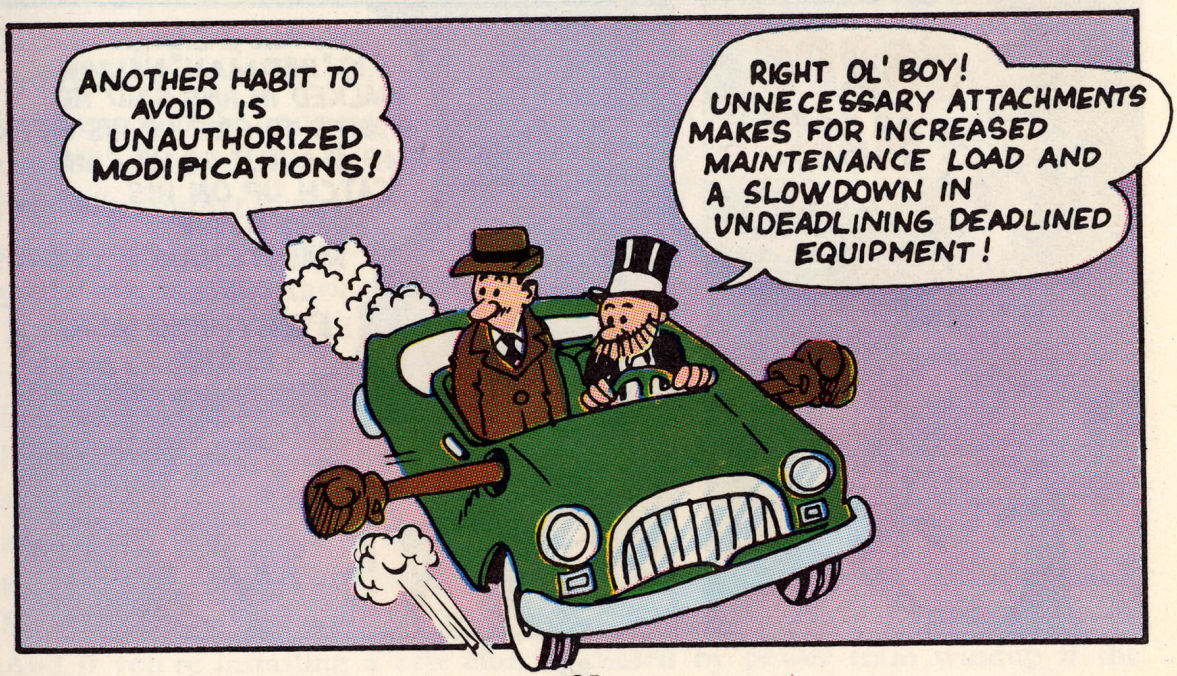
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

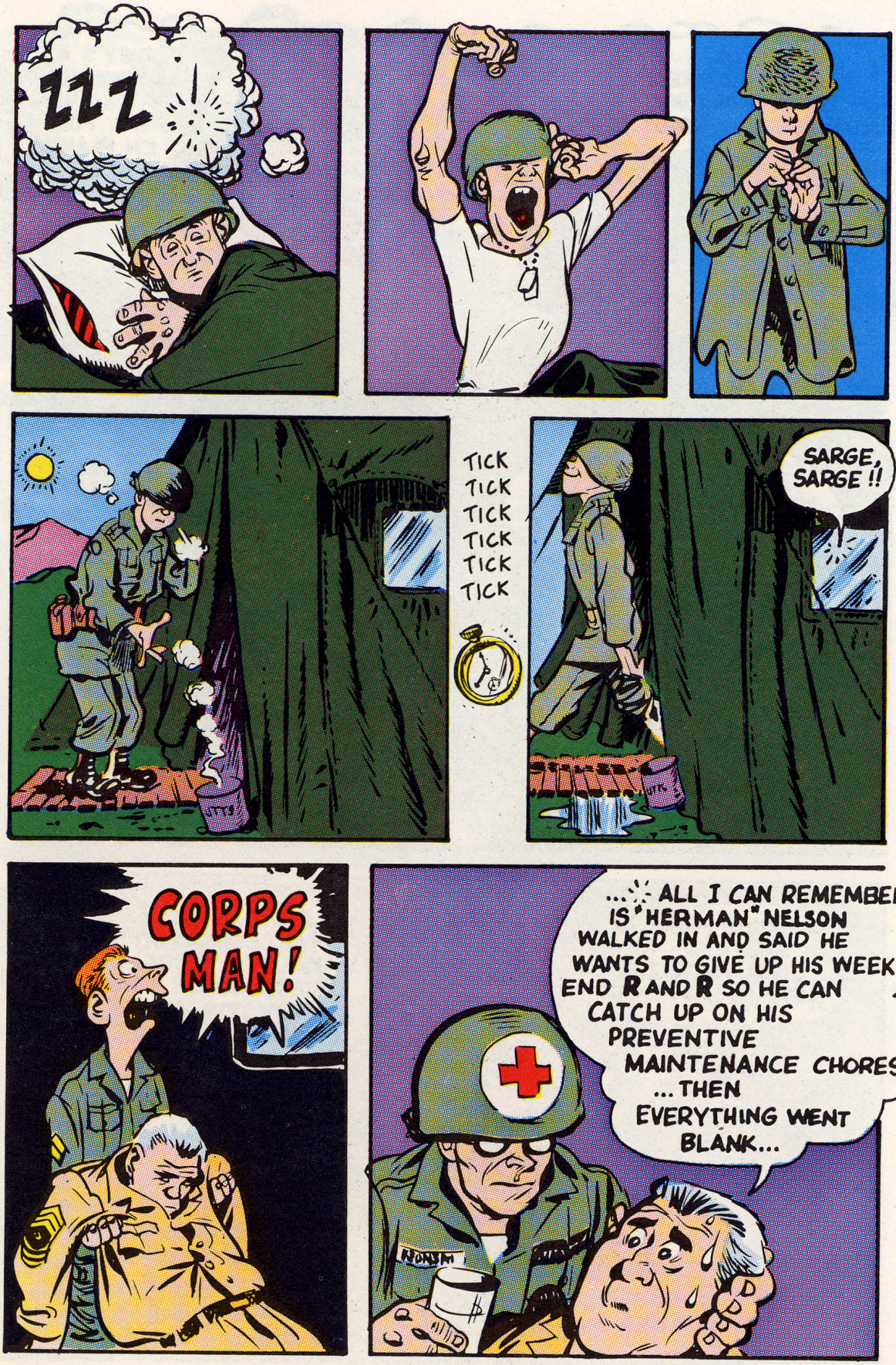
QUIPMENT ...Take care of it

ULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

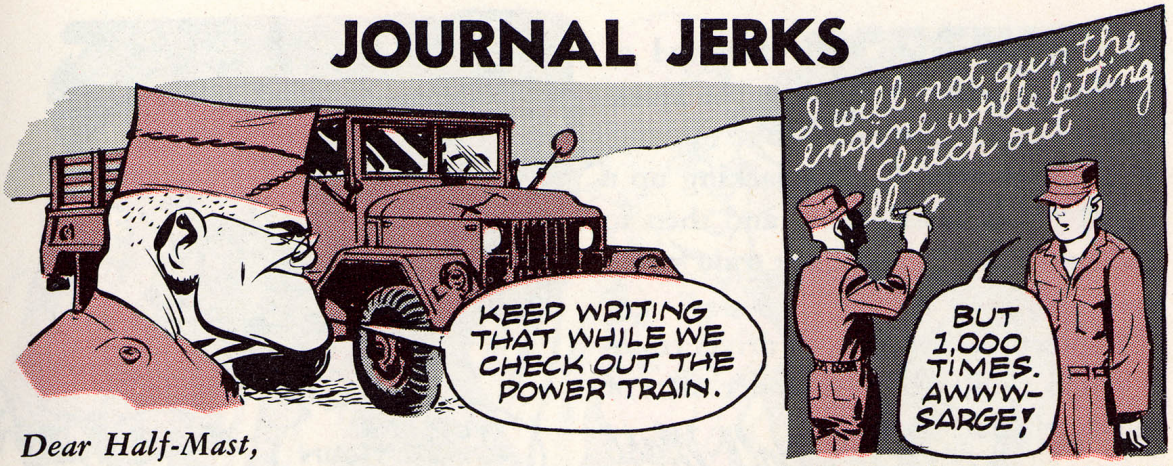

ENEMY
ZAP
TO HAVE EQUIPMENT THAT IS READY WHEN YOU NEED IT! GOOD PREVENTIVE MAINTENANCE PRACTICE IS ALL THE MAGIC YOU NEED
YEAH... AND TALKING ABOUT MAGIC... LOOK AT YOUR PAPERWORK!
AH SO WOT... I'M A FIGHTING MAN. WHAT'S KEEPING FORMS TO ME?
TELL HIM, MR. STACY.
WHY, SON, EVERY PIECE OF EQUIPMENT IN THE HANDS OF TROOPS--EVERY LOG BOOK--EVERY EIR... ALL CONTRIBUTE TO THE CONTINUING IMPROVEMENT OF TOOLS AND WEAPONS!
THE INFORMATION YOU SUPPLY TODAY HELPS PUT BETTER EQUIPMENT IN YOUR HANDS TOMORROW AND MORE IMPORTANT TO YOU TODAY, IT HELPS YOUR SUPPORT PEOPLE KEEP EQUIPMENT READY NOW!
CUTS DOWN GUESSING BY COMMANDERS ...THE INFO TELLS THEM WHAT THEY'VE GOT TO FIGHT WITH.


HE'S STILL ASLEEP! IS THERE MORE WE CAN TELL HIM ABOUT HOW TO GET EQUIPMENT READY ???
THEY'S A LOT WE 'UNS C'N TELL HIM AS ANY FOOL C'N PLAINLY SEE!
Z ZZ Z
THERE'S GOOD MAINTENANCE HABITS F'R INSTANCE...
LIKE NOT PUTTING OFF ROUTINE SERVICES AND INSPECTIONS.
TEE HEE, YOU SHOULD KNOW DOGTAG!
YES, SIR!


ANOTHER HABIT TO AVOID IS UNAUTHORIZED MODIFICATIONS!
RIGHT OL' BOY! UNNECESSARY ATTACHMENTS MAKES FOR INCREASED MAINTENANCE LOAD AND A SLOWDOWN IN UNDEADLINING DEADLINED EQUIPMENT!


ZZZ
TICK
TICK
TICK
TICK
TICK
SARGE, SARGE !!
CORPS MAN!
...ALL I CAN REMEMBER IS "HERMAN" NELSON WALKED IN AND SAID HE WANTS TO GIVE UP HIS WEEK END R AND R SO HE CAN CATCH UP ON HIS PREVENTIVE MAINTENANCE CHORES ...THEN EVERYTHING WENT BLANK...

JOURNAL JERKS



Dear Half-Mast,

Two of our G744-series trucks with the improved clutch called for in MWO 9-2320-211-30/2 (Feb 59) have turned up with broken journals (FSN 2520-734-8845) on the transmission-to-transfer prop shaft.

Maybe some lead-foot gunned the engine when letting out the clutch, but I can't pin it down. Have you heard of any other journal failures like this?

S/Sgt M. E. L.

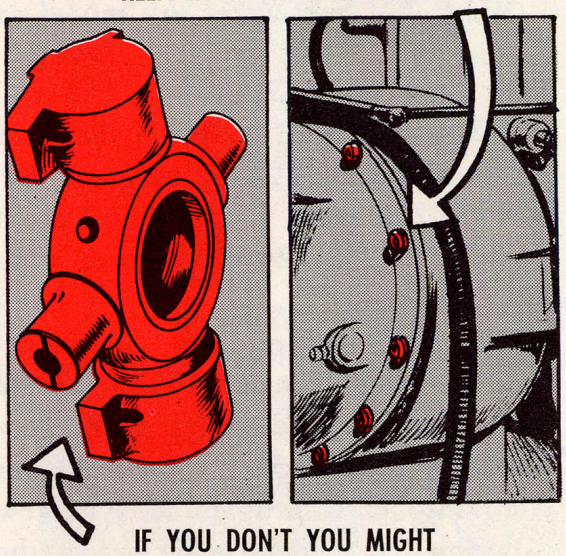
Dear Sergeant M.E.L.,

The same story's hit me from several directions, Sarge. I'd suggest the first place to check is those drivers' slam-bang driving habits.

But there could be more there than jackrabbit driving. F'rinstance, there's an MWO, now rescinded, that those trucks might have missed. It's MWO Ord G744-W26 (19 Oct 55) that called for changes in the universal joint adapters on those shafts to increase the journal's angular clearance . . . sometimes called sidewise slap. But that, you might say, is water thru the sluice.

There's also a possibility that looseness of the housings for the clutch or flywheel could cause this failure. If the housings slip just a bit, the transmission may drop just enough to jam and break the journal. So housing cap screws should be checked for tightness. See para 205 in TM 9-8028 (Jun 55). And if you're installing a new clutch, new lockwashers and screws should be used.

KEEP THESE CAP SCREWS TIGHT



IF YOU DON'T YOU MIGHT BREAK THIS JOURNAL

It's likely to be hard to spot this looseness as a cause of failure after it happens, because all housings may break loose when a journal goes.

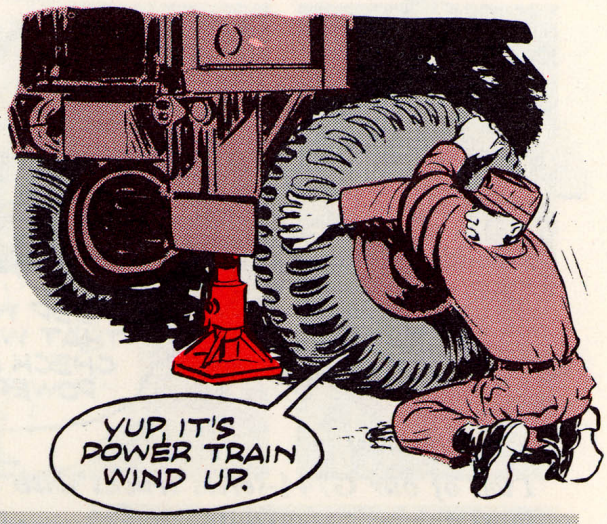
Then, too, this failure could be caused by power train windup if the

PS MORE

truck's allowed to drift forward or backward without shifting the transmission to the direction you're moving. You might prevent it by jacking up a wheel on each axle now and then to make sure there's no power train wind-up.

So, keep one eye on your driver training and t'other on the under side of those vehicles.

Half-Mast



Dear Half-Mast,

I have a few 1½-ton cargo trailers which are identified on their nomenclature plates as XM105E3; the plates also refer to TM 9-8226.

But does the TM list this model number? No it doesn't!

What TM does cover this model and what does the "X" mean?

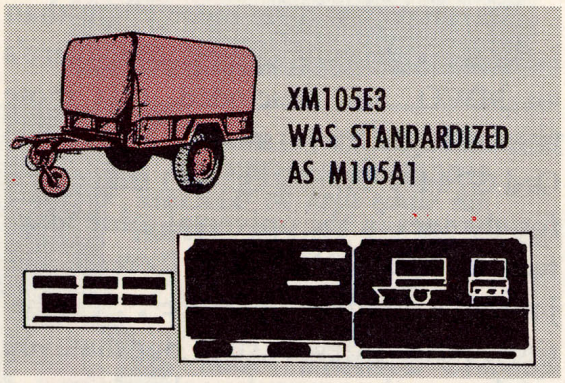
SFC M. G. A.

Dear Sergeant M.G.A.,

Your XM105E3 trailer is the same as the M105A1 1½-ton cargo trailer. TM 9-8226 plus TM 9-2330-245-14 and TM 9-2330-245-24P cover your "X" model.

The story behind the "X" model goes like this. The XM105E3 was an experimental model which was standardized as the M105A1 when the trailer went into mass production. The few experimental trailers made before the production trailers kept XM105E3 as their model designation.

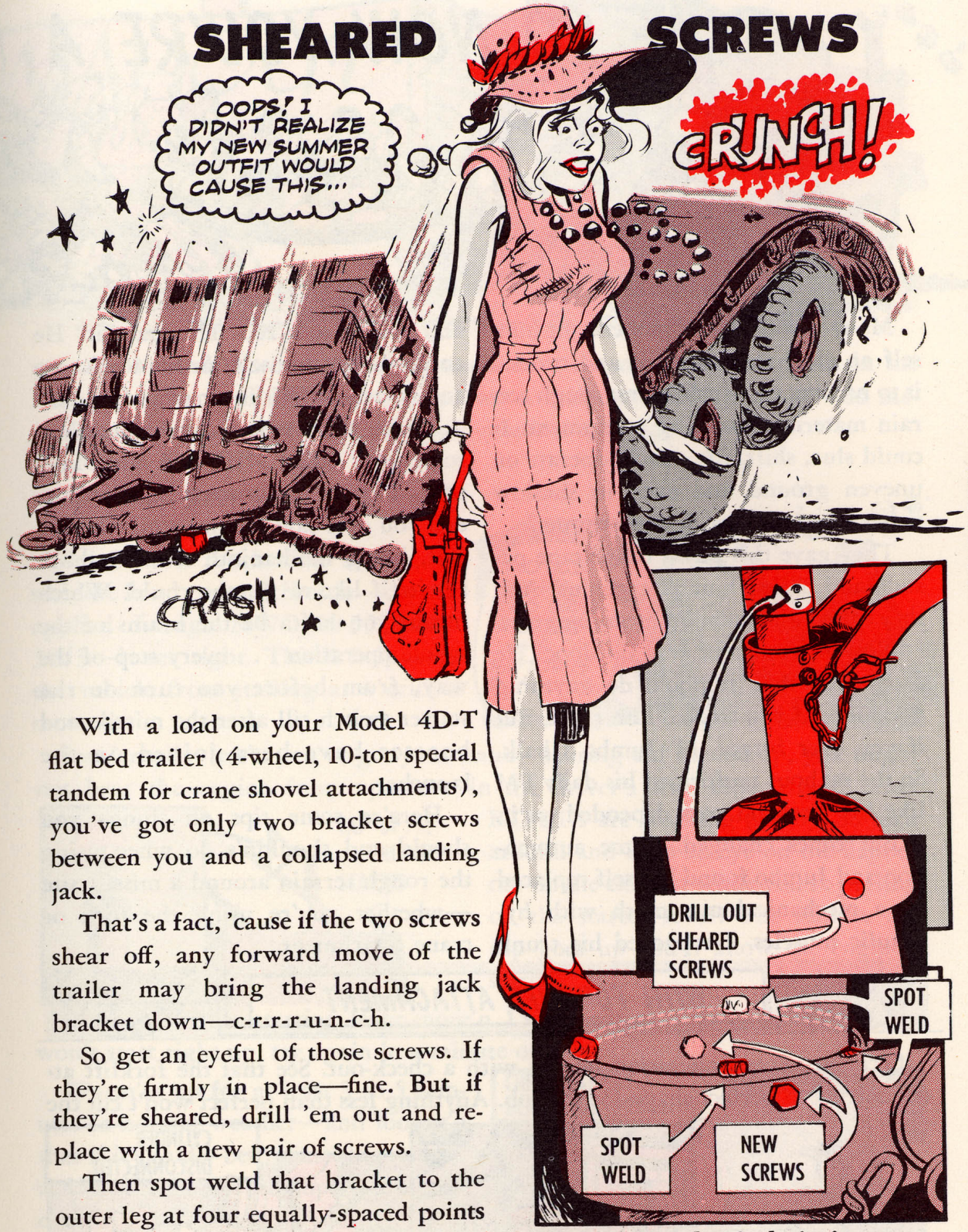
In general, the letter "X" before the "M" model designation on Ordnance vehicles means an experimental vehicle. In some cases, a few experimental models are manufactured and issued to find out if the experimental version is adequate for its intended purpose. This is how you got yours.



To bring your XM105E3 trailers up to date have your support unit replace their identification plates with new ones; they can requisition these new plates from Red River Army Depot, Texarkana, Texas.

Half-Mast

SHEARED SCREWS



With a load on your Model 4D-T flat bed trailer (4-wheel, 10-ton special tandem for crane shovel attachments), you've got only two bracket screws between you and a collapsed landing jack.

That's a fact, 'cause if the two screws shear off, any forward move of the trailer may bring the landing jack bracket down—c-r-r-r-u-n-c-h.

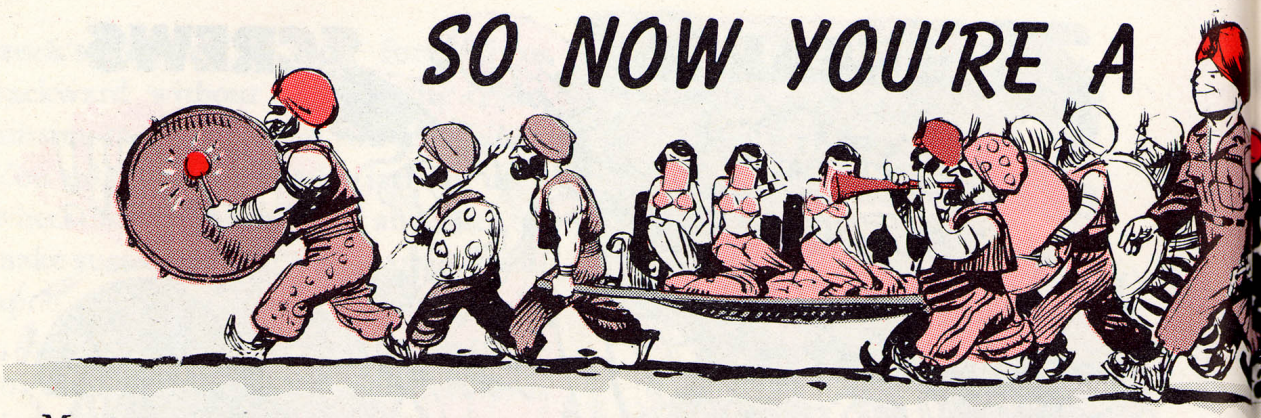
So get an eyeful of those screws. If they're firmly in place—fine. But if they're sheared, drill 'em out and replace with a new pair of screws.

Then spot weld that bracket to the outer leg at four equally-spaced points —say at 3, 6, 9 and 12 o'clock.

Even after this fix is applied, you've got to watch it when moving out with that trailer.

Make sure the jack is in retract position and locked up before you get under way. Then it'll be ready for use when you arrive at the next stop.

SO NOW YOU'RE A



Many moons ago, a guy caught himself an elephant, tamed it and trained it to become the world's first rough terrain materials handling equipment. It could slue, shift, lift, reach, operate on uneven ground and even in shallow water. And it'd work for peanuts.

They gave this guy a ticker-tape parade and hailed him as a genius. And they called him mahout, meaning great.

Now this mahout was no dope. He discovered that Jumbo'd do anything you asked if you treated him right. But if you ever forgot, ol' Jumbo'd balk. So the mahout performed his daily PM like his weekend pass depended on it.

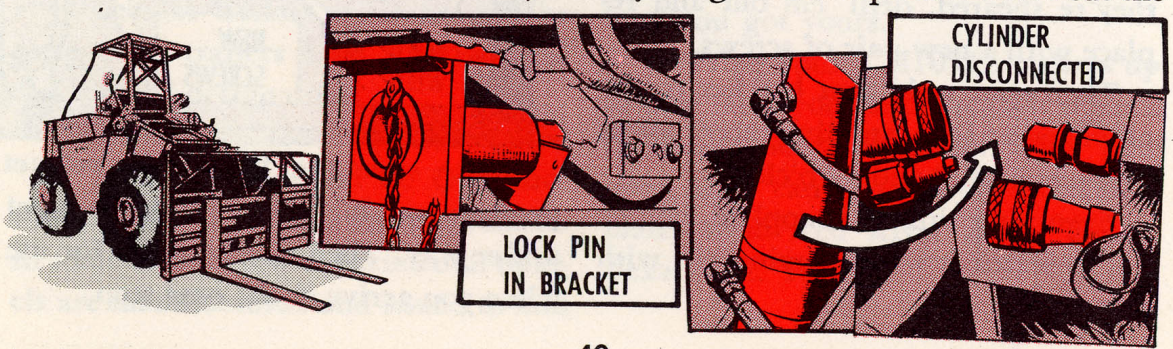
But times changed. Came automation and Jumbo found himself replaced by a mechanical mammoth with hydraulic muscles. He packed his trunk and moved to a zoo. The mahout? He enlisted, got himself an SF-46 license and became YOU know who!

Today this mechanical mammoth—sometimes called MHE 165 and sometimes 173—is the greatest beast of burden you ever saw around a missile site. But, being mechanical, it can't think for itself like ol' Jumbo could. Which means you hafta be the brains of the whole operation . . . every step of the way, from before you turn on the starter switch till after the missile and booster have been joined on the launcher.

Here're some tips on things you should and shouldn't do when using the rough terrain around a missile site —whether you're using the fork or crane attachment.

WITH FORKLIFT ATTACHMENT

O'course, every operation begins with a check-out. See that the forklift attachment's in perfect shape for the job. Anything less than perfect won't cut the



SO NOW YOU'RE A MAHOUT WITH YOUR NEW MHE 165

Many moons ago, a guy caught himself an elephant, tamed it and trained it to become the world's first rough terrain materials handling equipment. It could slue, shift, lift, reach, operate on uneven ground and even in shallow water. And it'd work for peanuts.

They gave this guy a ticker-tape parade and hailed him as a genius. And they called him mahout, meaning great.

Now this mahout was no dope. He discovered that Jumbo'd do anything you asked if you treated him right. But if you ever forgot, ol' Jumbo'd balk. So the mahout performed his daily PM like his weekend pass depended on it.

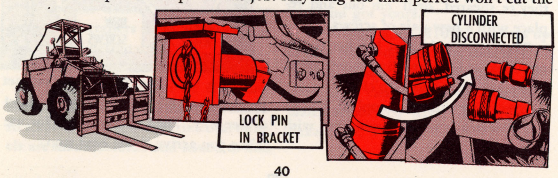
But times changed. Came automation and Jumbo found himself replaced by a mechanical mammoth with hydraulic muscles. He packed his trunk and moved to a zoo. The mahout? He enlisted, got himself an SF-46 license and became YOU know who!

Today this mechanical mammoth—sometimes called MHE 165 and sometimes 173—is the greatest beast of burden you ever saw around a missile site. But, being mechanical, it can't think for itself like ol' Jumbo could. Which means you hafta be the brains of the whole operation . . . every step of the way, from before you turn on the starter switch till after the missile and booster have been joined on the launcher.

Here're some tips on things you should and shouldn't do when using the rough terrain around a missile site—whether you're using the fork or crane attachment.

WITH FORKLIFT ATTACHMENT

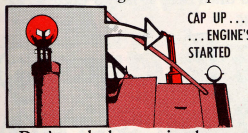
O'course, every operation begins with a check-out. See that the forklift attachment's in perfect shape for the job. Anything less than perfect won't cut the mustard around missiles. Especially make sure the rear axle lockpin is in the storage bracket and that the rear oscillation cylinder is hydraulically and mechanically disconnected from the truck rotation system.



STARTING UP

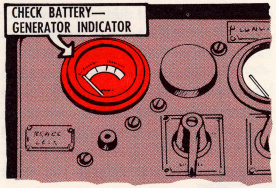
Before you touch that starter, be sure the hand control throttle—the one applied through MWO 10-3930-223-30/3—is set right. This'll help keep the vehicle from stalling at a critical moment.

Incidentally, less'n you've got your handy hearing aid turned up, you might not hear the engine from up there in the driver's seat, especially if other RTFLT's are working nearby. So turn around and keep an eye on the flapper cap on the exhaust while you're pulling on the starter lever. The minute the cap goes up you'll know the engine's started.

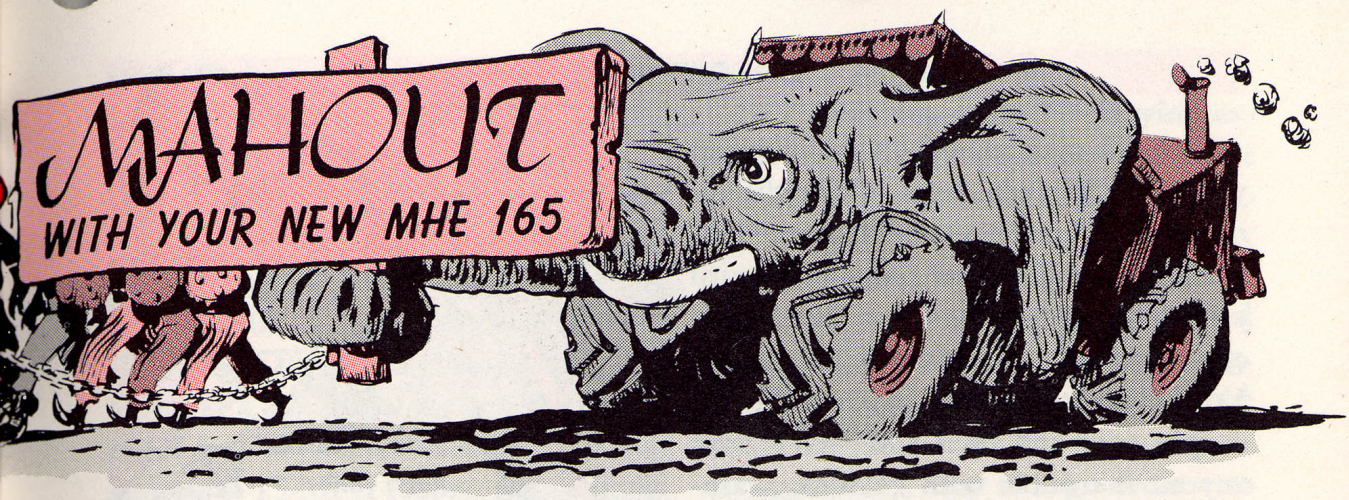


Don't yank that starting lever more'n 15 seconds at a time, though. If she won't start right up, try again in a minute or so.

Warm'er up for at least 3 to 5 minutes in normal weather—and longer'n that if it's cold—before moving out . . . at least till the water temperature gage climbs to 160 degrees. And don't forget to check the battery-generator indicator with the ignition switch on and off, like it says in Para 7e in TM 10-3930-223-10 (Jan 61).



MORE

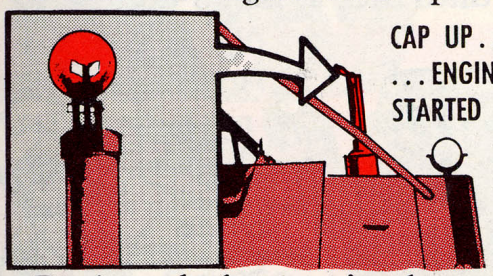


mustard around missiles. Especially make sure the rear axle lockpin is in the storage bracket and that the rear oscillation cylinder is hydraulically and mechanically disconnected from the truck rotation system.

STARTING UP

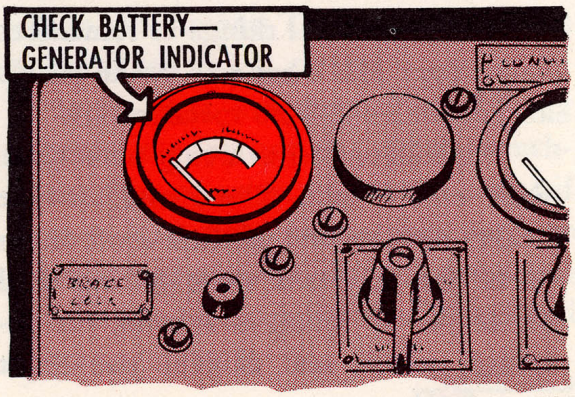
Before you touch that starter, be sure the hand control throttle—the one applied through MWO 10-3930-223-30/3—is set right. This'll help keep the vehicle from stalling at a critical moment.

Incidentally, less'n you've got your handy hearing aid turned up, you might not hear the engine from up there in the driver's seat, especially if other RTFLT's are working nearby. So turn around and keep an eye on the flapper cap on the exhaust while you're pulling on the starter lever. The minute the cap goes up you'll know the engine's started.



Don't yank that starting lever more'n 15 seconds at a time, though. If she won't start right up, try again in a minute or so.

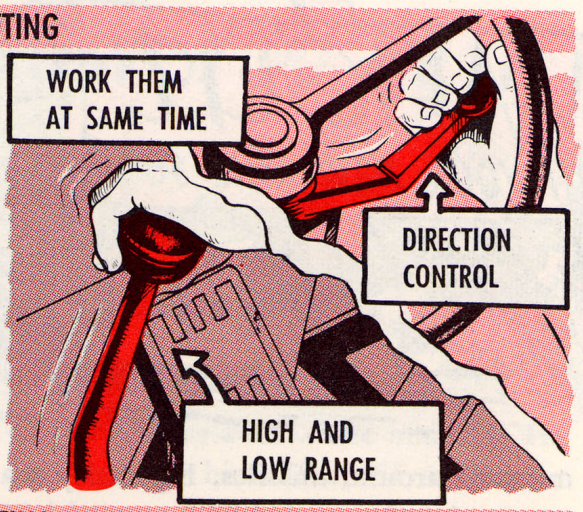
Warm'er up for at least 3 to 5 minutes in normal weather—and longer'n that if it's cold—before moving out . . . at least till the water temperature gage climbs to 160 degrees. And don't forget to check the battery-generator indicator with the ignition switch on and off, like it says in Para 7e in TM 10-3930-223-10 (Jan 61).



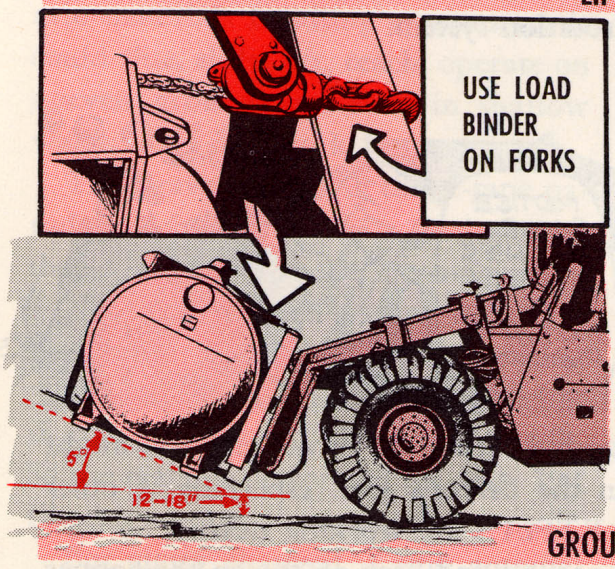
P.S. MORE

SHIFTING

Here's a trick to make it easier to get your RTFLT into gear: Work the directional control lever with your right hand and the high-low range lever with your left hand at the same time. Do it easy-like till the gears synchronize. You'll get the hang of this after a couple tries and then you won't have any more trouble with grinding, rasping and grating.



LIFTING

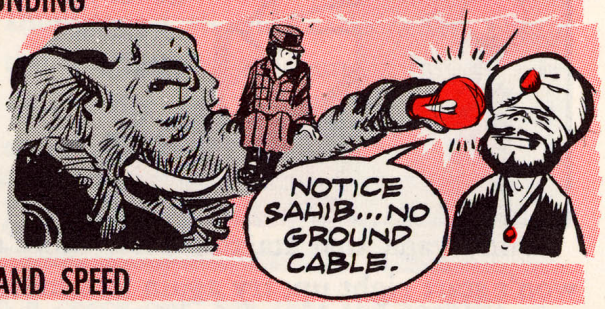


When you're lifting a load with forks, be sure to keep the load level by using the ball bank indicator and the oscillation control lever.

If your CO says it's OK, you can move M-409 containers on the forks, too, as long as you use a load binder (FSN 3930-250-6356 . . . QM) or a suitable ¾-in cable to make sure the container rides snug. But keep the forks no more'n 12-18 inches off the ground and tilted back at least 5 degrees.

GROUNDING

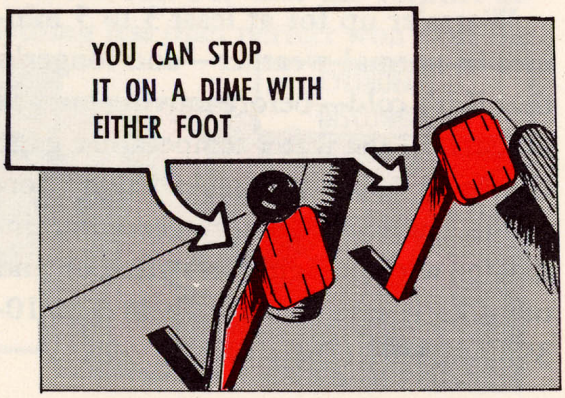
Static electricity's a demon around missile sites—especially in dry sandstorm areas and wherever you have a lot of thunderstorms. So be sure to use a ground cable at all times.



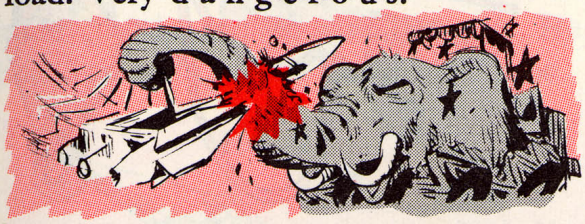
BRAKES AND SPEED

There're several things to remember here. Your MHE has two brake pedals and no clutch and no speedometer.

This means you can stop on a dime with either foot. These aircraft-type brakes are the first of their kind on an MHE and they take some getting used to. If you're toting a missile, for instance, watch real careful you don't



stop so short you swing your potent load. Very d-a-n-g-e-r-o-u-s!

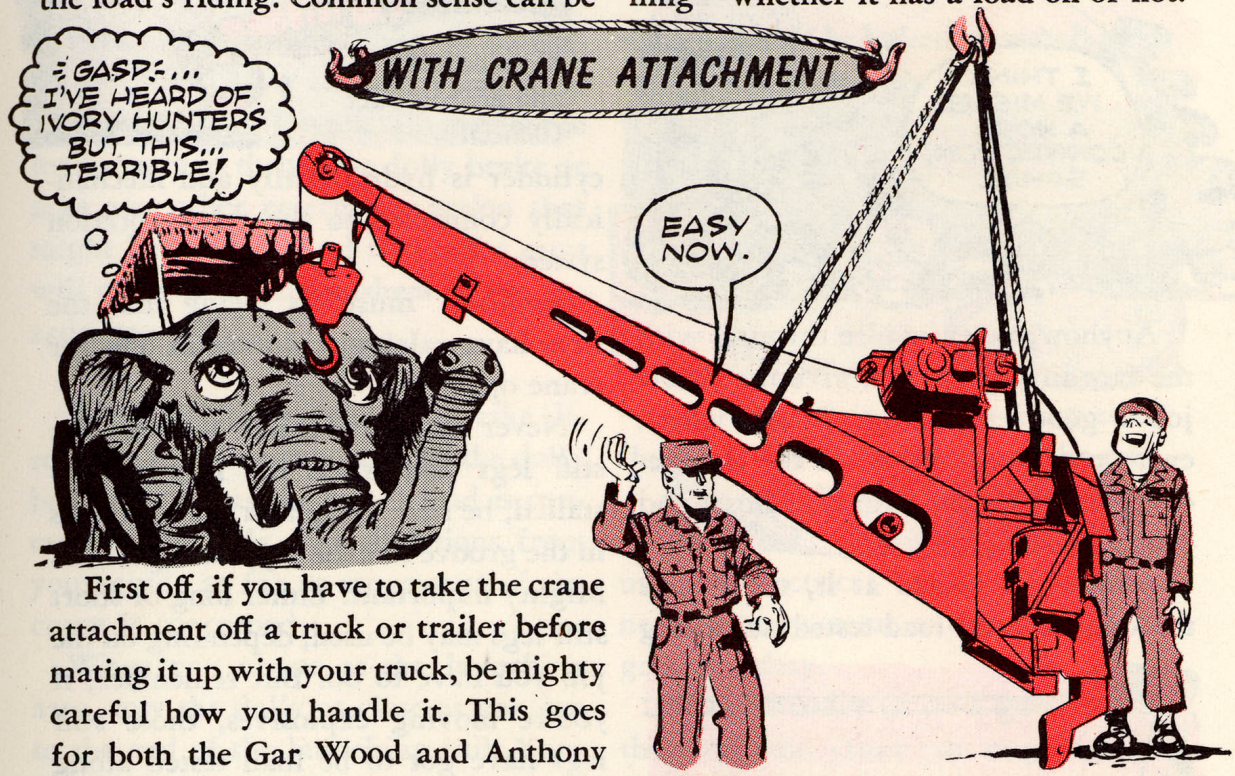


Likewise the speed. This baby'll roll along at a pretty good clip—up to 25-MPH forward and reverse while empty and up to 15-MPH loaded. All you can do is to judge the speed for yourself. Find the right speed by watching how the load's riding. Common sense can be your only guide. Use it.

Of course, when you're carrying explosives you'll drive behind your guide and won't go any faster than he's walking.

When you come to put the load down, do it like you'd lay down an egg. Read and heed and practice the dope in TM 10-3930-223-10.

Incidentally, this is a good time to remind yourself never to leave the vehicle untended while the engine's running—whether it has a load on or not.



First off, if you have to take the crane attachment off a truck or trailer before mating it up with your truck, be mighty careful how you handle it. This goes for both the Gar Wood and Anthony models.

For instance, when you lift it, put one end of the sling underneath the boom pivot and the other in the third or fourth hole of the boom. **NEVER**—repeat—never put the sling under the winch.

Another thing, always use wire rope or chain for the sling—never hemp or sisal.

And always use a crane to unload a crane attachment. Trying to do it with forks is too risky.

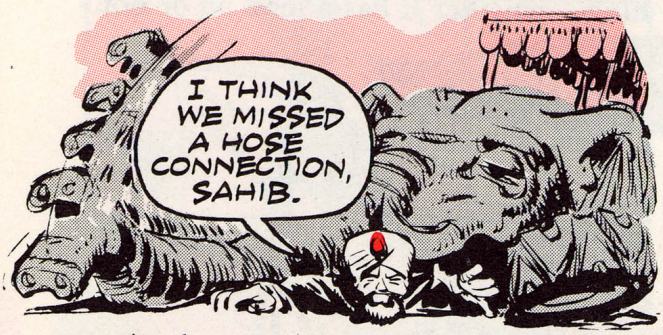
Some guys complain about having trouble mating up the crane attachment. But you won't have any sweat if you make a habit of putting the base of the crane on a 4x4-in block first. This works fine for both the Gar Wood and Anthony models.

PS MORE

KEEP IT CLEAN

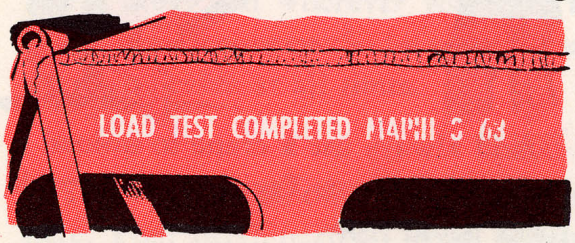
When you and your buddies remove the fork attachment and put on the crane gizmo, stick close to the dope in Chapter 3 of TM 10-3930-218-10 (Jun 61). A little carelessness here could cost Uncle a small mint—and maybe even the life you love so dearly.

For example, less'n you're mighty careful you could get dirt in the hydraulic system . . . or leave out a pin . . . or bust a hose . . . or . . . er . . . but can you think of anything worse?



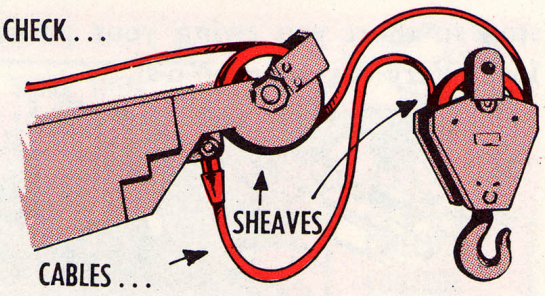
Anyhow, when you're through with the face-lifting project, give the whole job a good eyeballing. Double check every part you touched in the change-over, especially the hydraulic hoses and connections.

And while you're at it, make sure the crane's been load-tested according



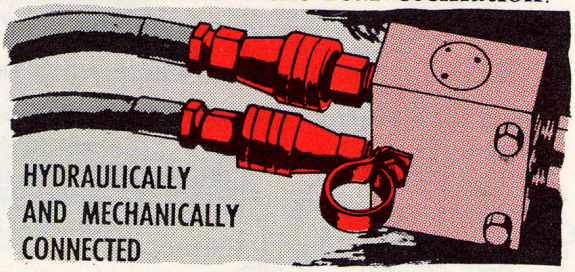
to the scoop in Para 15 in TM 10-3930-218-25 (Jul 61)—meaning in the last six months or 500 operating hours or since a sheave or cable, etc., has been changed.

And check those cables, sheaves, baskets, sockets, etc., too. They're go-



ing to handle something bigger'n both of you and twice as nasty.

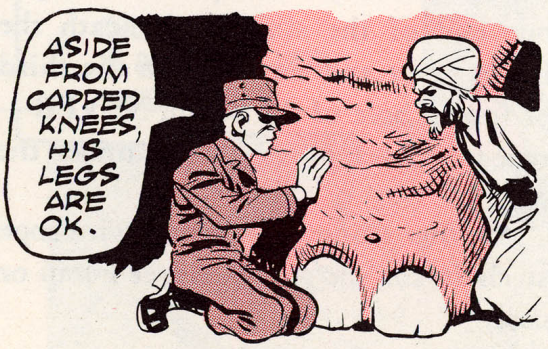
One of the first things you want to do is to make sure the rear oscillation



cylinder is hydraulically and mechanically connected to the truck rotation system.

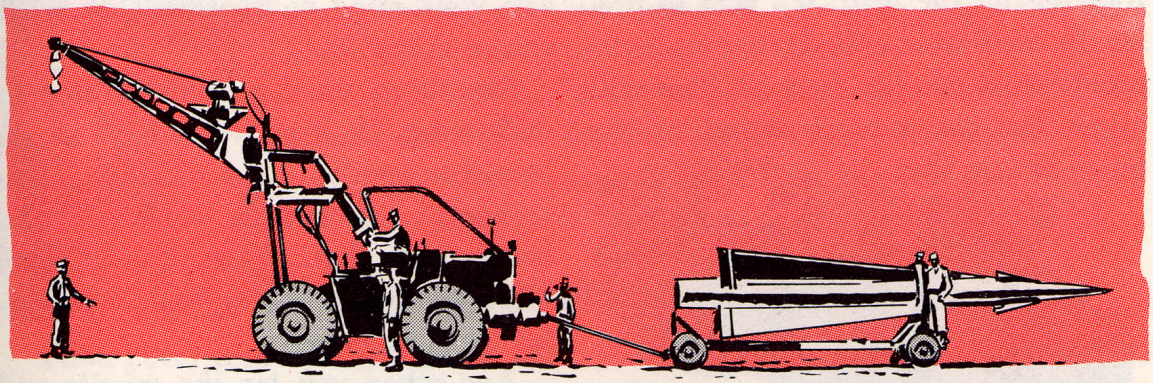
Another "must" is seeing that the tires have calcium chloride in 'em for crane operation.

Never use the vehicle without the stiff legs and when the legs are installed, be sure to tighten the setscrews in the groove so's the legs can't pull off. Mighty important! Either long or short stiff legs may be used, depending on the job you have to do. But remember, if you're moving explosives, those stiff legs have got to be load tested along with the crane attachment.



SIGNALS ON

Don't ever try to load or unload or even move your crane unless you have a buddy on the ground giving signals. He should always be in a position to see both you and the load at the same time.

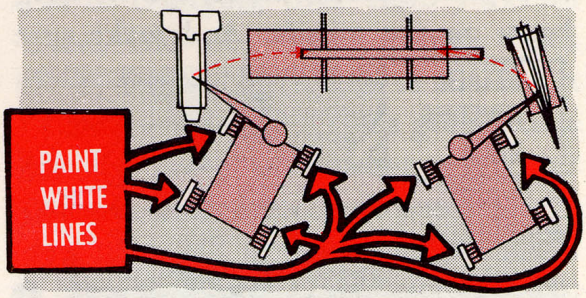


Follow your signal man to the exclusion area. Two assembly men (not politicians!) will walk alongside the load, ready to throw the dolly brake or take any other emergency action that might be needed. And two other guys will carry fire extinguishers in the parade, too.

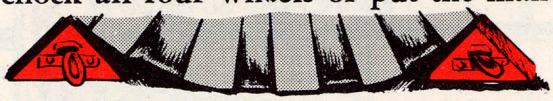
While you're in formation, take directions from the two guys on the dolly brakes as far as the lethal load is concerned, but only take directions from your guide as far as movement of the crane is concerned.

When you arrive at the launching area, tow the dolly as close as you can to the end of the launching rail. Your helpers will then disconnect the pintle and loosen the sling. While you're turning the vehicle around, they'll push the dolly the rest of the way into position and chock it for loading onto the launcher.

To load the missile or booster onto the rail for the joining, you have to preposition the crane. Lots of outfits paint white lines on the macadam where the wheels should be halted. Saves all kinds of headaches.



After your rig's lined up right, either chock all four wheels or put the manual and electrical brakes on. Though not necessary, some outfits do both for greater safety.



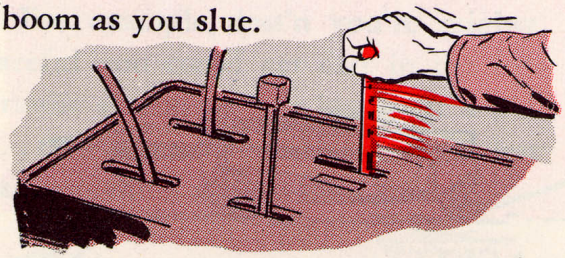
Now, in order to do a good job up there on your crane you oughta know the entire operation of joining the missile. So, before doing another thing, make sure you get a good briefing on just what's going to happen and what you're supposed to do about it. Don't be afraid to ask questions.

EASY NOW

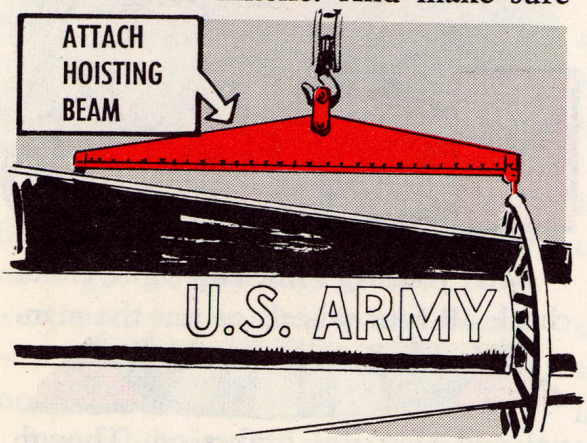
From here on in you're in the hands of your signal man, so watch him like a hawk.

PS MORE

Since you can't operate the reach, tilt and lift control levers when a load's suspended from the hook, you'll have to make all necessary adjustments before raising the load. It's best to preset the oscillation cylinder a couple degrees before you lift the load. This will allow for the natural action of the boom as you slue.

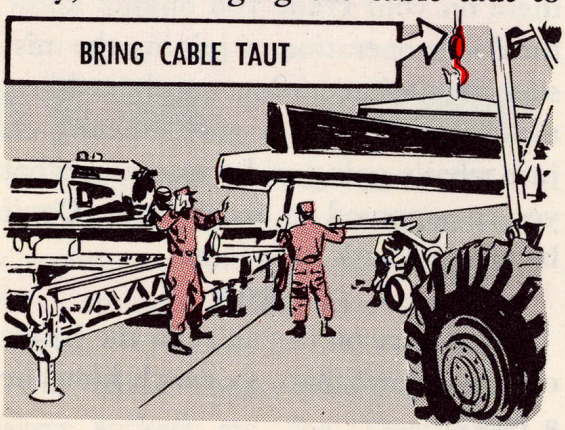


Let your signal man double check how your buddies attach the hoisting beam on the missile. And make sure



you've got no kinks in the chain on the lifting arm boom.

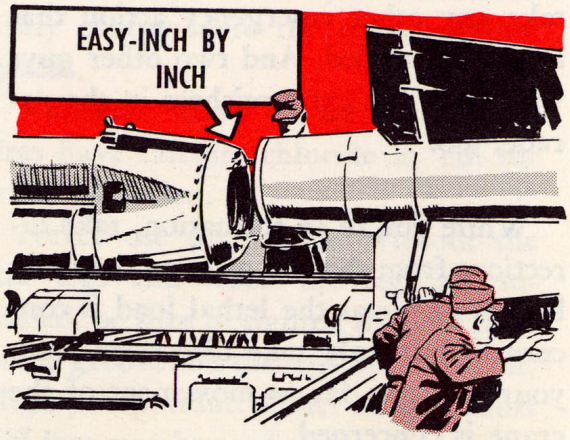
After they hook up, lift ever so carefully, first bringing the cable taut to



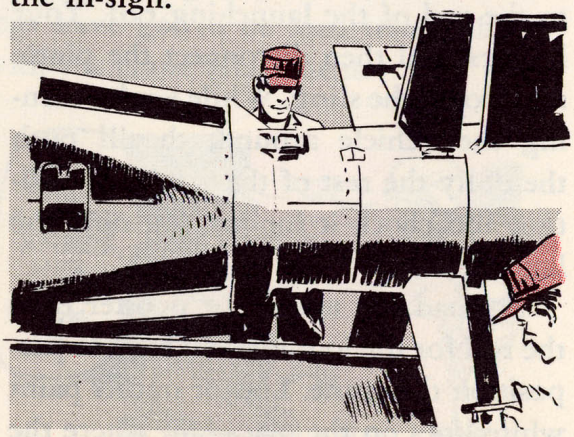
see that the beam will carry evenly. Then lift further till the missile's airborne. Slue very slowly, keeping your eyes and ears glued to your signal man and your mind concentrated on what you're doing.

One thing you don't do is to stop in mid-swing. Or if you ever have to, do it ever so gently . . . no rocking . . . no rolling . . . no sudden jerking . . . no matter how slight. Doesn't take much vibration or back swing to do a powerful lot of damage.

And when you lay the missile and booster on the rail, lay 'em like a feather. And when you join up, brother, easy does it . . . inch by inch, slow and gentle-like. Concentrate!



After the joining job's done, don't back away till your guide gives you the hi-sign.



ALL AROUND THE SITE

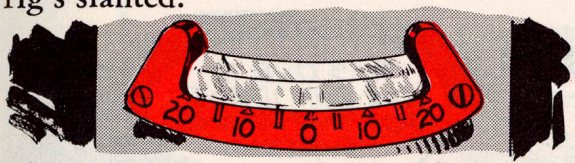
It won't take a brain to realize that the mahout who drives this mammoth must be able to play "Dixie" on it, which takes practice, man, and lots of it. You gotta know this beast inside out . . . its every whim and whimper.

That's why, whenever you get called on to do other chores around the site—with the fork or crane attachment—make every operation a preparation for the big job. Get to know how this baby reacts to every push of every lever.

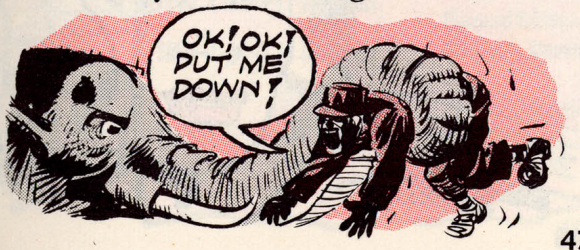
SOME REMINDERS

First, never pick up any load till you know your MHE can handle it. Then make sure the load's attached good and tight.

If you have to make like a mountain goat with the forks on, remember the gradeability and side stability limits of the vehicle. The tabulated data in TM 10-3930-223-10 says you can operate on a 45-percent grade, which means 24 degrees. For side stability, you can operate on a 30-percent slope, which comes to about 16 degrees. Your ball bank indicator'll tell you how your rig's slanted.

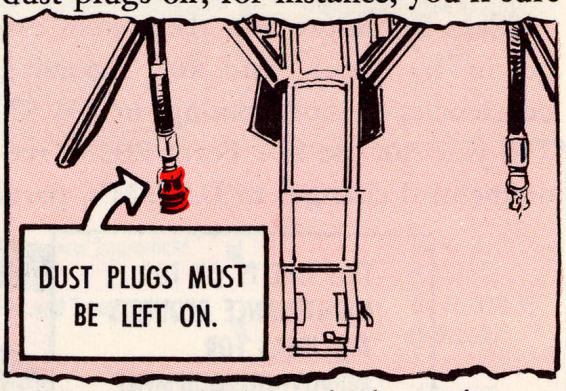


And when you're driving from one end of the site to the other—loaded or unloaded—don't try to hi-tail it like with your own jalopy. This is no hot-rod. It's a costly piece. Never abuse it. Like ol' Jumbo, it'll never forget . . . and the day of reckoning could arrive



just as you're mating a missile and booster.

Especially be real careful when you're changing over from forks to crane, and vice versa. Double check the hydraulic connections to see no dirt or sand gets in there. This goes double for the crane attachment while it's parked on the sidelines. If you leave the dust plugs off, for instance, you'll sure

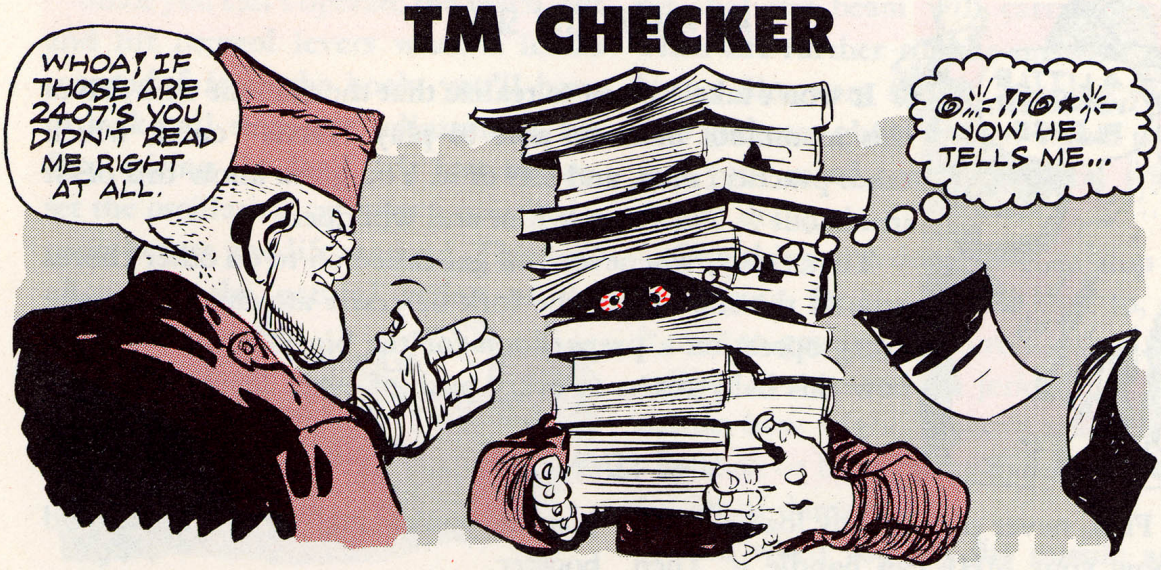


'nuff get gook through the entire system. Any oil left in the hose lines of the crane attachment after it's disconnected from the truck will get circulated in the entire system (truck and crane alike) after you've made connection and started up again.

Just keep this thought in mind: Your rough terrain vehicle is the most critical MHE in the world. It needs the most and best PM you can muster.

PS END

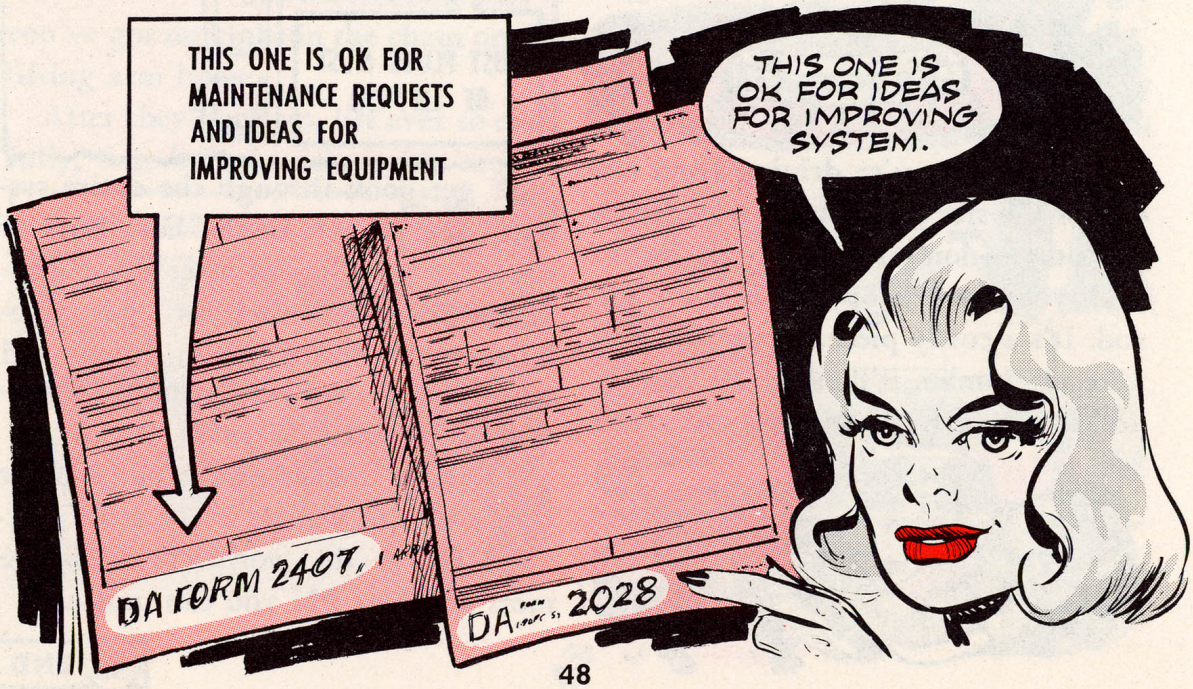
TM CHECKER

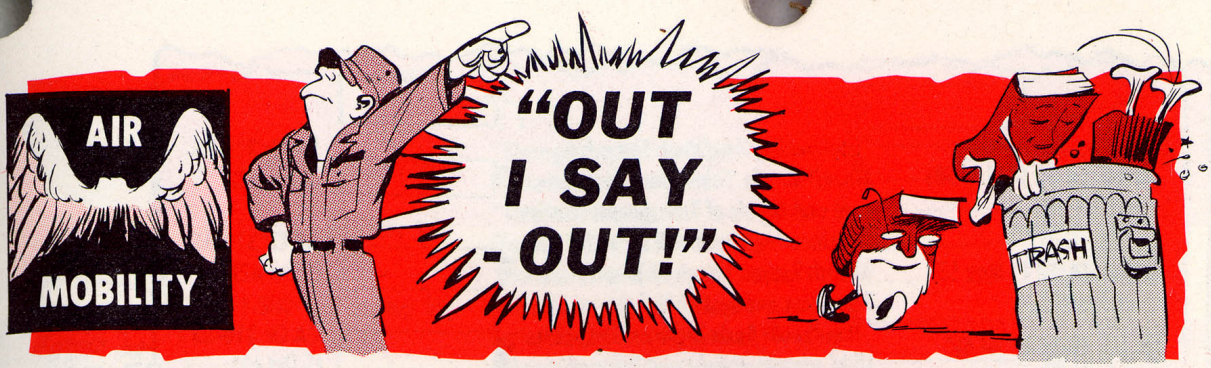


DA Form 2407, the one for maintenance requests and ideas for improving equipment, can do a lot of chores, and run a lot of errands for you—but it's not for sending in ideas for improving the new system and/or procedures, or for reporting errors you find in TM 38-750.

Ideas for improving the system can go in by letter, and for reporting deficiencies or short-comings in TM 38-750 you can use DA Form 2028 (recommended changes to DA TM's, parts lists or supply manuals), or you can send 'em in by letter.

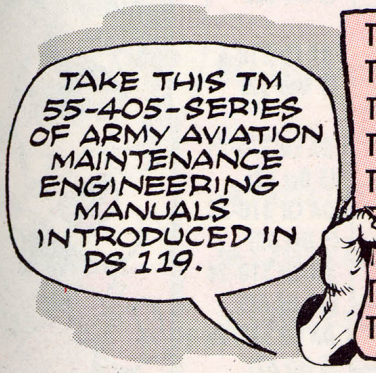
And, remember, whichever it is you're talking about, and whatever way you decide to send it in, the info goes through channels to your major command headquarters. That outfit'll shoot it to the President, U.S. Army Maintenance Board, Fort Knox, Kentucky, through the U.S. Army Supply and Maintenance Command, Washington, D. C.





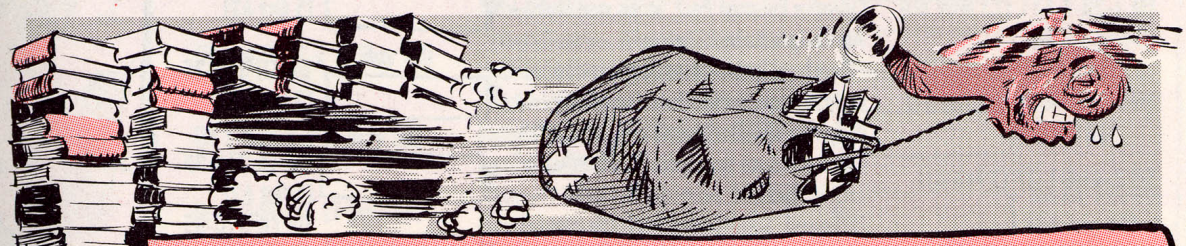
Old soldiers may fade away, but canceled pubs should go—right away.

That's one of the reasons for the existence of the 310-series of DA Circulars. They're your tickets to uncluttered shelves and the latest poop.



TM 55-405-1 (8 Nov 61)	"General Practices"
TM 55-405-2 (30 Aug 62)	"Aircraft Hardware and Materials"
TM 55-405-3 (10 May 62)	"Maintenance of Aircraft Systems"
TM 55-405-4 (6 Mar 62)	"Aircraft Structural Repair"
TM 55-405-5 (9 Nov 61)	"Aircraft Engines"
TM 55-405-6 (1 Nov 61)	"Aircraft Maintenance Tools"
TM 55-405-7 (13 Mar 62)	"Shop Practices"
TM 55-405-8 (15 Nov 61)	"Ground Support Equipment"
TM 55-405-9 (13 Feb 62)	"Weight and Balance"

The new manuals take this king size bite from your pile of old pubs.

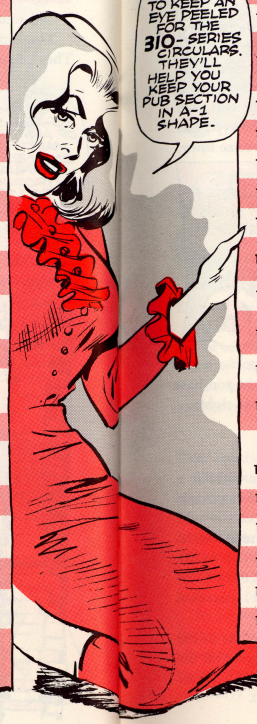


TM	Title	Replaced By	Authority
TM 1-1-1-1 (1 May 58)	"Cleaning of Aeronautical Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-1-1-2 (1 Jul 58)	"Corrosion Control and Treatment for Aircraft"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-1-1-3 (1 May 58)	"Repair of Integral and Removable Metal Fuel and Oil Tanks"	TM 55-405-4	DA Cir 310-35 (5 Oct 62)
TM 1-1-1-6 (1 May 58)	"Aircraft and Maintenance Parts: General; Disposition of Equipment Submerged in Water"	TM 55-405-1	DA Cir 310-35 (5 Oct 62)
TM 1-1-1-17 (1 Jul 58)	"Storage of Aircraft"	TM 55-405-1	DA Cir 310-13 (18 May 62)
TM 1-1-1-309 (3 Feb 61)	"Ground Operation, Service, and Maintenance of Aircraft"	TM 55-405-1	DA Cir 310-24 (30 Jul 62)
TM 1-1-1A-1 (1 May 58)	"General Manual for Structural Repair (Second Edition)"	TM 55-405-2	DA Cir 310-64 (13 Nov 61)
TM 1-1-1A-8 (6 Dec 54)	"Aircraft Structural Hardware"	TM 55-405-2	DA Cir 310-35 (5 Oct 62)
TM 1-1-1A-11 (1 May 58)	"Engineering Handbook Series for Aircraft Repair: Fabric Repair and Doping"	TM 55-405-4	DA Cir 310-35 (5 Oct 62)

PS MORE

TM	Title	Replaced By	Authority
TM 1-1-1A-12 (1 May 58)	"Engineering Handbook Series for Aircraft Repair: Fabrication, Maintenance and Repair of Transparent Plastics"	TM 55-405-4	DA Cir 310-35 (5 Oct 62)
TM 1-1-1A-13 (1 May 58)	"Engineering Handbook Series for Aircraft Repair: Repair of Wood Propellers and Test Clubs"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-1-1B-50 (1 Jul 58)	"Handbook: Basic Technical Order for USAF Aircraft Weight and Balance"	TM 55-405-9	DA Cir 310-35 (5 Oct 62)
TM 1-1-1B-53 (1 Jul 58)	"Handbook: Use of Gross Weight Scales on Balance Computers; All Aircraft"	TM 55-405-9	DA Cir 310-35 (5 Oct 62)
TM 1-2J-1-18 (25 Jul 61)	"Preserving and Depreserving of Gas Turbine Aircraft Engines (AO-1, HC-1, and HU-1)"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2J-T53-6 (6 Feb 61)	"Field Maintenance and Replacement Instructions: Gas Turbine Engines, Model T53-L-1, -1A, -1B (Avco)"	TM 55-405-3	DA Cir 310-6 (9 Mar 62)
TM 1-2R-1-11 (1 May 58)	"Corrosion Control of Reciprocating Aircraft Engines"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-15 (23 Apr 56)	"Reciprocating Engine Conditioning"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-84 (1 May 58)	"Cleaning of Reciprocating Aircraft Engines and Parts"	TM 55-405-3	DA Cir 310-24 (30 Jul 62)
TM 1-2R-1-205 (1 May 58)	"Corrosion Preventive Treatment of Engine Propeller Shafts	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-511 (23 May 60)	"Application of Special Lubricant on Cylinder Exhaust Port, Studs and Nuts—All Reciprocating Engines"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-3H1-1-43 (11 Jan 61)	"Overhaul Instructions for Counterweight Type, Solid Aluminum Alloy Propeller Blades (Hamilton Standard)"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4A4-1-32 (3 Feb 61)	"Maintenance Instructions: All Wheels and Brakes"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4S-1-2 (1 May 58)	"General; Selection of High Pressure Air Valve Cores for Hydraulic Systems and Shock Struts"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4T-1-2 (9 Aug 57)	"Dismounting, Mounting, and Inflation of Aircraft Tires and Tubes"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4T-1-3 (9 Aug 57)	"Inspection, Maintenance, Storage, and Disposition of Aircraft Tire Casings and Inner Tubes"	TM 55-405-2,-3	DA Cir 310-35 (5 Oct 62)
TM 1-4W-1-2 (23 Mar 60)	"Cleaning, Inspection, Repair, and Surface Treatment: All Aircraft Wheels"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-1 (1 May 58)	"Handbook Inspection, Maintenance, Storage, and Shipment: Instruments and Instrument Maintenance Parts"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-2 (10 Feb 61)	"Method of Marking Instruments and Interpretation of Markings"	NONE	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-10 (1 May 58)	"Use of Cleaning Solvents for Class 05 Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-6J14-1-1 (23 Mar 60)	"Repair, Handling, and Storage Instructions: Rubber and Nylon Fuel, Oil, and Water-Alcohol Cells"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)

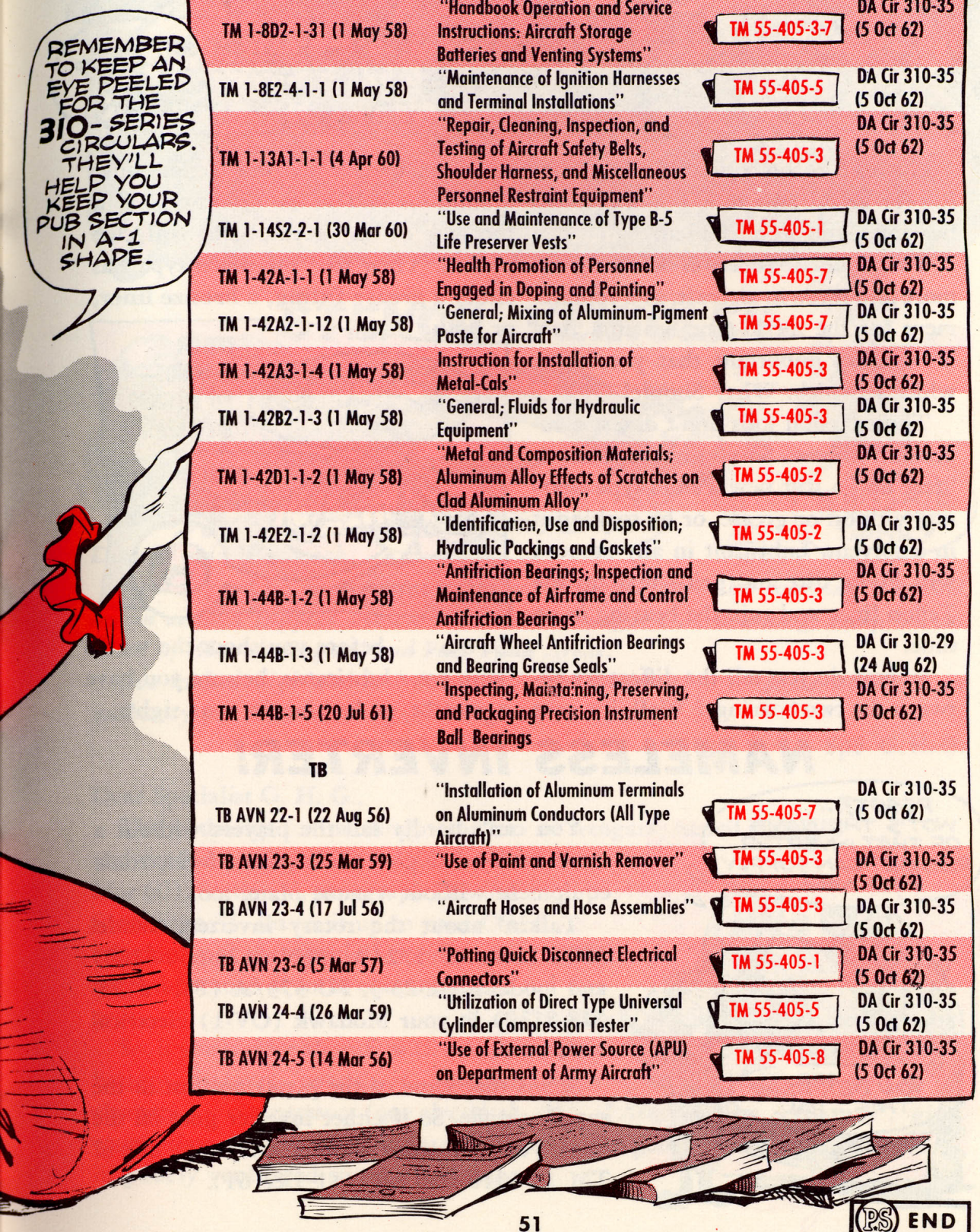
TM	Title	Replaced By	Authority
TM 1-1-1A-12 (1 May 58)	"Engineering Handbook Series for Aircraft Repair: Fabrication, Maintenance and Repair of Transparent Plastics"	TM 55-405-4	DA Cir 310-35 (5 Oct 62)
TM 1-1-1A-13 (1 May 58)	"Engineering Handbook Series for Aircraft Repair: Repair of Wood Propellers and Test Clubs"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-1-1B-50 (1 Jul 58)	"Handbook: Basic Technical Order for USAF Aircraft Weight and Balance"	TM 55-405-9	DA Cir 310-35 (5 Oct 62)
TM 1-1-1B-53 (1 Jul 58)	"Handbook: Use of Gross Weight Scales on Balance Computers; All Aircraft"	TM 55-405-9	DA Cir 310-35 (5 Oct 62)
TM 1-2J-1-18 (25 Jul 61)	"Preserving and Depreserving of Gas Turbine Aircraft Engines (AO-1, HC-1, and HU-1)"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2J-TS3-6 (6 Feb 61)	"Field Maintenance and Replacement Instructions: Gas Turbine Engines, Model TS3-L-1, -1A, -1B (Avco)"	TM 55-405-3	DA Cir 310-6 (9 Mar 62)
TM 1-2R-1-11 (1 May 58)	"Corrosion Control of Reciprocating Aircraft Engines"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-15 (23 Apr 56)	"Reciprocating Engine Conditioning"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-84 (1 May 58)	"Cleaning of Reciprocating Aircraft Engines and Parts"	TM 55-405-3	DA Cir 310-24 (30 Jul 62)
TM 1-2R-1-205 (1 May 58)	"Corrosion Preventive Treatment of Engine Propeller Shafts	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-2R-1-511 (23 May 60)	"Application of Special Lubricant on Cylinder Exhaust Port, Studs and Nuts—All Reciprocating Engines"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-3H1-1-43 (11 Jan 61)	"Overhaul Instructions for Counterweight Type, Solid Aluminum Alloy Propeller Blades (Hamilton Standard)"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4A4-1-32 (3 Feb 61)	"Maintenance Instructions: All Wheels and Brakes"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4S-1-2 (1 May 58)	"General; Selection of High Pressure Air Valve Cores for Hydraulic Systems and Shock Struts"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4T-1-2 (9 Aug 57)	"Dismounting, Mounting, and Inflation of Aircraft Tires and Tubes"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-4T-1-3 (9 Aug 57)	"Inspection, Maintenance, Storage, and Disposition of Aircraft Tire Casings and Inner Tubes"	TM 55-405-2, 3	DA Cir 310-35 (5 Oct 62)
TM 1-4W-1-2 (23 Mar 60)	"Cleaning, Inspection, Repair, and Surface Treatment: All Aircraft Wheels"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-1 (1 May 58)	"Handbook Inspection, Maintenance, Storage, and Shipment: Instruments and Instrument Maintenance Parts"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-2 (10 Feb 61)	"Method of Marking Instruments and Interpretation of Markings"	NONE	DA Cir 310-35 (5 Oct 62)
TM 1-5-1-10 (1 May 58)	"Use of Cleaning Solvents for Class 05 Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-6J14-1-1 (23 Mar 60)	"Repair, Handling, and Storage Instructions: Rubber and Nylon Fuel, Oil, and Water-Alcohol Cells"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)



TM	Title	Replaced By	Authority
TM 1-6J14-1-4 (1 May 58)	"Storage, Inspection, Repair and Preservation External Fuel Tanks"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-6J14-1-5 (1 May 58)	"Torque Values for Self-Sealing and Bladder Cell Multi-Bolt Fittings"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-8D2-1-31 (1 May 58)	"Handbook Operation and Service Instructions: Aircraft Storage Batteries and Venting Systems"	TM 55-405-3-7	DA Cir 310-35 (5 Oct 62)
TM 1-8E2-4-1-1 (1 May 58)	"Maintenance of Ignition Harnesses and Terminal Installations"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-13A1-1-1 (4 Apr 60)	"Repair, Cleaning, Inspection, and Testing of Aircraft Safety Belts, Shoulder Harness, and Miscellaneous Personnel Restraint Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-14S2-2-1 (30 Mar 60)	"Use and Maintenance of Type B-5 Life Preserver Vests"	TM 55-405-1	DA Cir 310-35 (5 Oct 62)
TM 1-42A-1-1 (1 May 58)	"Health Promotion of Personnel Engaged in Doping and Painting"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TM 1-42A2-1-12 (1 May 58)	"General; Mixing of Aluminum-Pigment Paste for Aircraft"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TM 1-42A3-1-4 (1 May 58)	Instruction for Installation of Metal-Cals"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-42B2-1-3 (1 May 58)	"General; Fluids for Hydraulic Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-42D1-1-2 (1 May 58)	"Metal and Composition Materials; Aluminum Alloy Effects of Scratches on Clad Aluminum Alloy"	TM 55-405-2	DA Cir 310-35 (5 Oct 62)
TM 1-42E2-1-2 (1 May 58)	"Identification, Use and Disposition; Hydraulic Packings and Gaskets"	TM 55-405-2	DA Cir 310-35 (5 Oct 62)
TM 1-44B-1-2 (1 May 58)	"Antifriction Bearings; Inspection and Maintenance of Airframe and Control Antifriction Bearings"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-44B-1-3 (1 May 58)	"Aircraft Wheel Antifriction Bearings and Bearing Grease Seals"	TM 55-405-3	DA Cir 310-29 (24 Aug 62)
TM 1-44B-1-5 (20 Jul 61)	"Inspecting, Maintaining, Preserving, and Packaging Precision Instrument Ball Bearings	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB			
TB AVN 22-1 (22 Aug 56)	"Installation of Aluminum Terminals on Aluminum Conductors (All Type Aircraft)"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TB AVN 23-3 (25 Mar 59)	"Use of Paint and Varnish Remover"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB AVN 23-4 (17 Jul 56)	"Aircraft Hoses and Hose Assemblies"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB AVN 23-6 (5 Mar 57)	"Potting Quick Disconnect Electrical Connectors"	TM 55-405-1	DA Cir 310-35 (5 Oct 62)
TB AVN 24-4 (26 Mar 59)	"Utilization of Direct Type Universal Cylinder Compression Tester"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TB AVN 24-5 (14 Mar 56)	"Use of External Power Source (APU) on Department of Army Aircraft"	TM 55-405-8	DA Cir 310-35 (5 Oct 62)

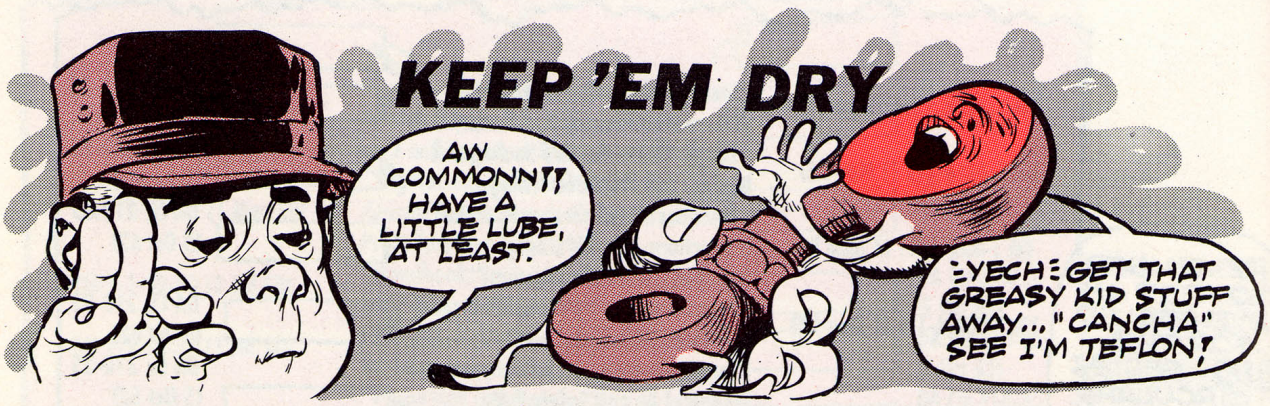
END

TM	Title	Replaced By	Authority
TM 1-6J14-1-4 (1 May 58)	"Storage, Inspection, Repair and Preservation External Fuel Tanks"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-6J14-1-5 (1 May 58)	"Torque Values for Self-Sealing and Bladder Cell Multi-Bolt Fittings"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-8D2-1-31 (1 May 58)	"Handbook Operation and Service Instructions: Aircraft Storage Batteries and Venting Systems"	TM 55-405-3-7	DA Cir 310-35 (5 Oct 62)
TM 1-8E2-4-1-1 (1 May 58)	"Maintenance of Ignition Harnesses and Terminal Installations"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TM 1-13A1-1-1 (4 Apr 60)	"Repair, Cleaning, Inspection, and Testing of Aircraft Safety Belts, Shoulder Harness, and Miscellaneous Personnel Restraint Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-14S2-2-1 (30 Mar 60)	"Use and Maintenance of Type B-5 Life Preserver Vests"	TM 55-405-1	DA Cir 310-35 (5 Oct 62)
TM 1-42A-1-1 (1 May 58)	"Health Promotion of Personnel Engaged in Doping and Painting"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TM 1-42A2-1-12 (1 May 58)	"General; Mixing of Aluminum-Pigment Paste for Aircraft"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TM 1-42A3-1-4 (1 May 58)	Instruction for Installation of Metal-Cals"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-42B2-1-3 (1 May 58)	"General; Fluids for Hydraulic Equipment"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-42D1-1-2 (1 May 58)	"Metal and Composition Materials; Aluminum Alloy Effects of Scratches on Clad Aluminum Alloy"	TM 55-405-2	DA Cir 310-35 (5 Oct 62)
TM 1-42E2-1-2 (1 May 58)	"Identification, Use and Disposition; Hydraulic Packings and Gaskets"	TM 55-405-2	DA Cir 310-35 (5 Oct 62)
TM 1-44B-1-2 (1 May 58)	"Antifriction Bearings; Inspection and Maintenance of Airframe and Control Antifriction Bearings"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TM 1-44B-1-3 (1 May 58)	"Aircraft Wheel Antifriction Bearings and Bearing Grease Seals"	TM 55-405-3	DA Cir 310-29 (24 Aug 62)
TM 1-44B-1-5 (20 Jul 61)	"Inspecting, Maintaining, Preserving, and Packaging Precision Instrument Ball Bearings	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB			
TB AVN 22-1 (22 Aug 56)	"Installation of Aluminum Terminals on Aluminum Conductors (All Type Aircraft)"	TM 55-405-7	DA Cir 310-35 (5 Oct 62)
TB AVN 23-3 (25 Mar 59)	"Use of Paint and Varnish Remover"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB AVN 23-4 (17 Jul 56)	"Aircraft Hoses and Hose Assemblies"	TM 55-405-3	DA Cir 310-35 (5 Oct 62)
TB AVN 23-6 (5 Mar 57)	"Potting Quick Disconnect Electrical Connectors"	TM 55-405-1	DA Cir 310-35 (5 Oct 62)
TB AVN 24-4 (26 Mar 59)	"Utilization of Direct Type Universal Cylinder Compression Tester"	TM 55-405-5	DA Cir 310-35 (5 Oct 62)
TB AVN 24-5 (14 Mar 56)	"Use of External Power Source (APU) on Department of Army Aircraft"	TM 55-405-8	DA Cir 310-35 (5 Oct 62)



PS END

KEEP 'EM DRY

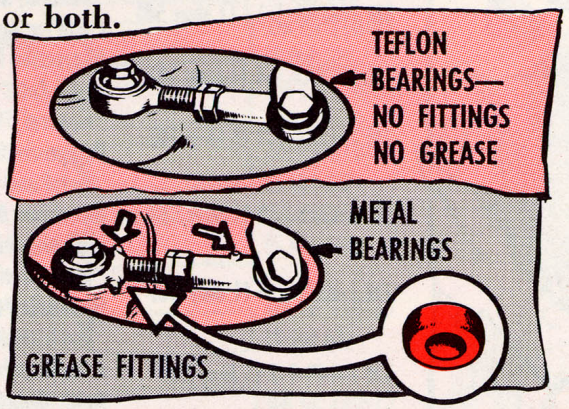


No need to do a double-take, looking for an oil hole in a Teflon rod end bearing—you won't find any!

The rugged Teflon is showing up more and more in aircraft, as a replacement for the metal-type bearing. And it's mighty important that you know which is which. Why? Simple!

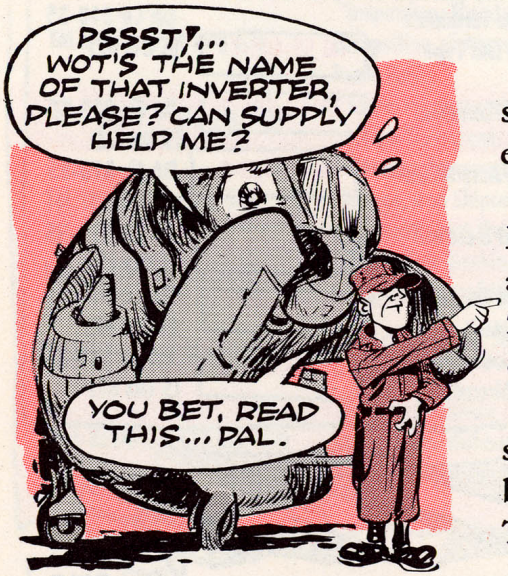
Those Teflon jobs don't digest a lubricant, nohow. So you **never** want to "free up" a stiff new Teflon-type bearing with oil or grease, or by soaking it in a solvent. Lubricant in any amount will invite dirt and grit—tear up the Teflon liner and ruin the bearing in no time.

So how do you tell the difference between the two bearings? Well, it's next to impossible to see the Teflon liner around the ball on the Teflon-type. But the lack of any grease hole will clue you in. Then too, the metal-type has either a **grease fitting, a bronze liner,** or **both.**



So-o-o . . . before you shoot the works with your lubricator, be sure you have a metal-type bearing in your sights.

NAMELESS INVERTER!



You can't hardly tell the players without a score card—that goes for a piece of electronic equipment without a name plate, too.

Talkin' about the rotary inverters, model MGE-22-1, PU 572/A (FSN 6125-660-8100) and model MGE-23-3, PU 573/A (FSN 6125-578-8130) in your Mohawk (OV-1) electrical system.

Seems that some of the plates got lost in the supply shuffle. So if either inverter goes on the bum, you can order another one right out of TM 11-1510-204-12P (11 Dec 61).

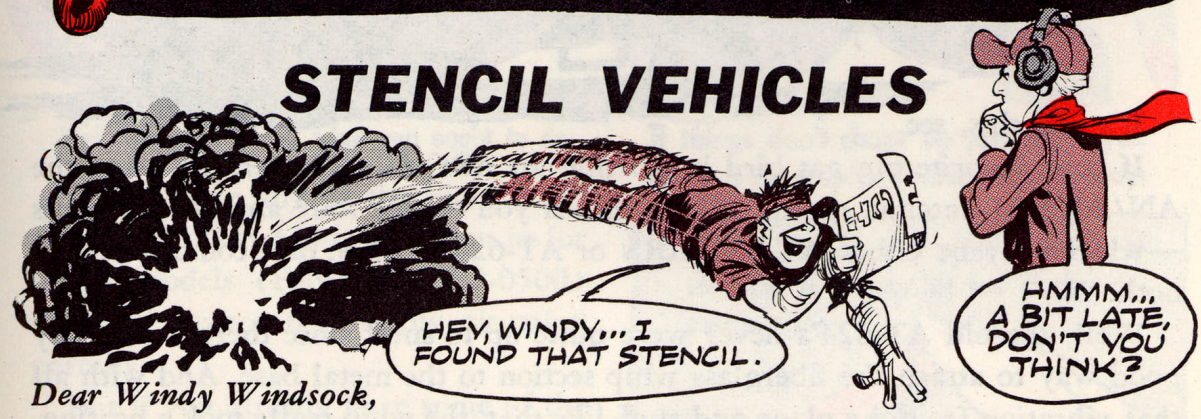
THREAD THE NEEDLE

When you thread lock wire through an engine oil-pressure control-valve drilled cap, and you're looking for a place to anchor it, open those baby blues wide to find the right spot.

Anchoring wire around nuts and such is for the birds 'cause it can vibrate free.

Most engines have an eyelet right on the housing in the area of the cap. You just thread the needle, man!

STENCIL VEHICLES



Dear Windy Windsock,

I got gigged by an inspector who said I should have this warning stenciled on an airfield support vehicle used in the hangar . . . Warning, Keep 5 Feet Clear of Aircraft Engines and Fuel Tank Areas.

I've looked high and low but still haven't been able to come up with an authority for this stenciling. What gives?

Sp5 G. H. G.

Dear Specialist G. H. G.,

The authority for marking vehicles and equipment is AR 746-2300-1 (11 Mar 60). Section V, paragraph 22e and f, on page 31, leaves it up to your CO whether or not special notices are needed because of local operating hazards.

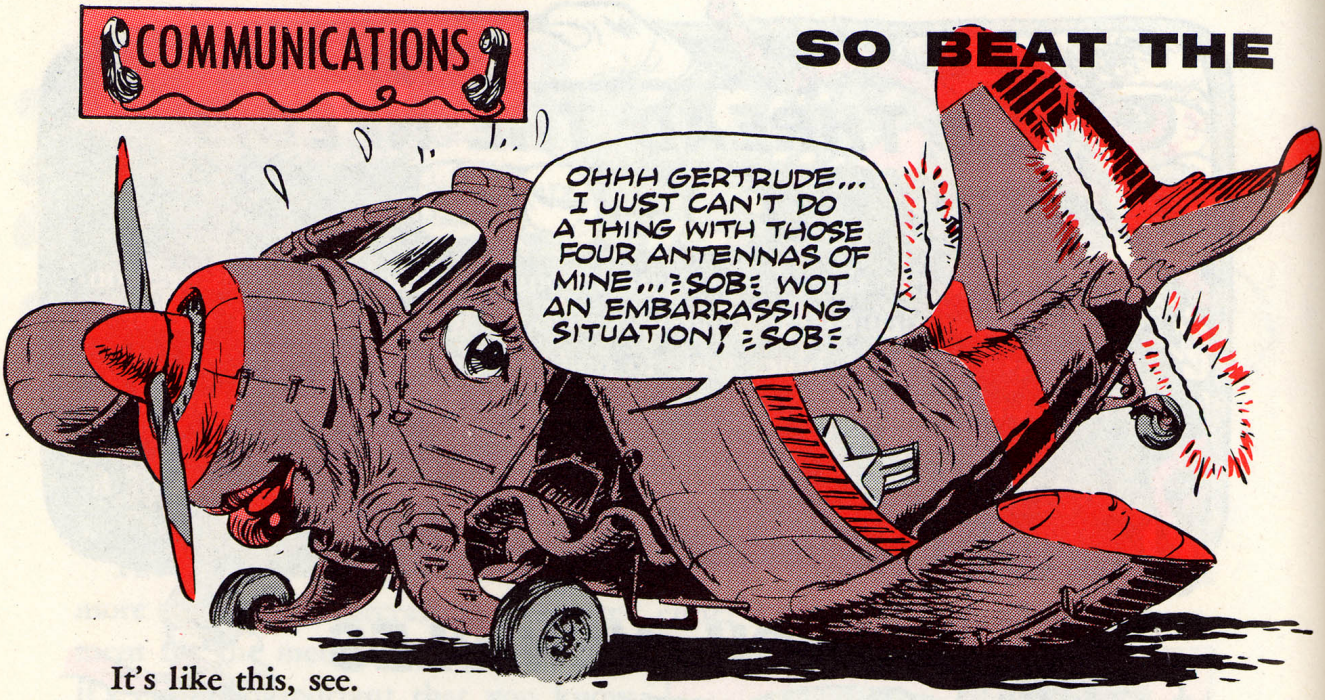
So, if you service aircraft with mobile battery chargers, energizers, vacuum cleaners, air compressors (any electrical source that can give off a big fat spark) in poorly ventilated storage buildings or hangars, stencil the unit:

"WARNING—KEEP 5 FEET CLEAR OF AIRCRAFT ENGINES AND FUEL TANK AREAS".

This is in the Underwriters National Electric Code, Number 70 (5 Aug 59), under Article 513. AR 385-10 (23 Jul 59), "Army Safety Program", gives you the green light to use the Code.

Windy Windsock

SO BEAT THE

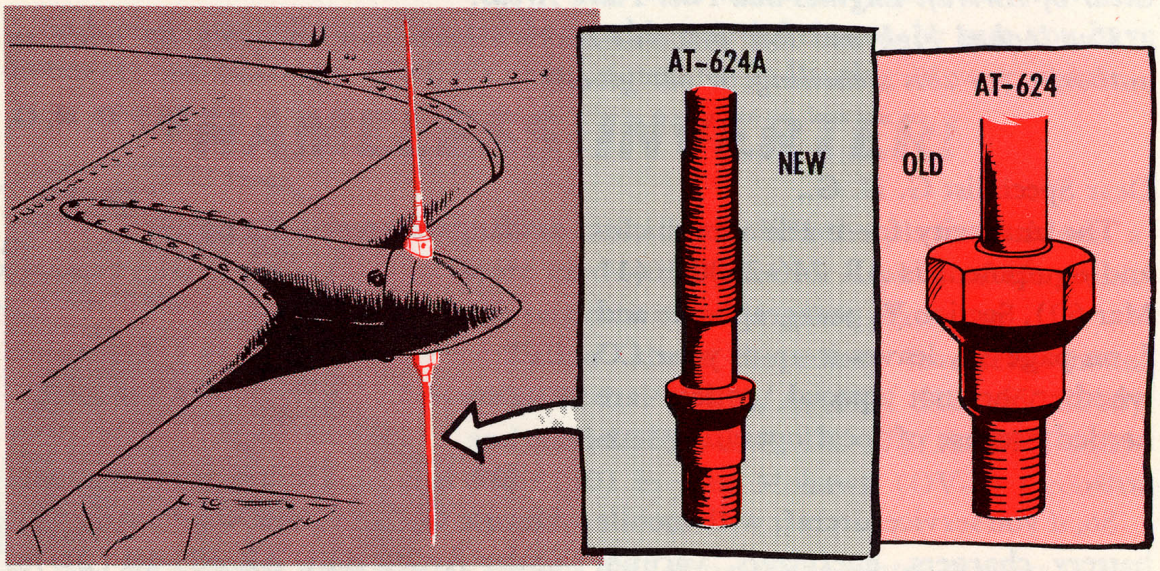


It's like this, see.

If your favorite big gas bird is sporting an ARC-44 radio set, it's using the AN/ARA-31 antenna group. Which means you've got four antenna elements —which may be either AT-624/AR's or AT-624A/AR's, or a combination of both.

Well, the old AT-624's never were quite up to snuff since there wasn't any good way to attach the fiberglass whip section to the metal base. And with all that vibration from the plane and stuff like that, the whip really took a beating.

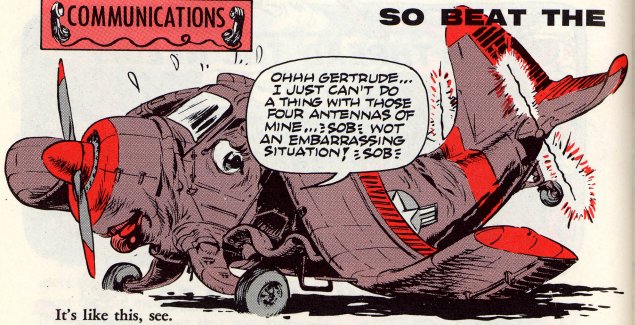
So, along comes the new, improved AT-624A, with a taper pin designed to lock the whip to the base. Good show.



Just one little ol' thing, though. Some of the A models missed out on the pin, so improvement-wise, your antenna elements may never have left the ground. Or element-wise, you may be Zero-Zero.

COMMUNICATIONS

SO BEAT THE WHIP PROBLEM

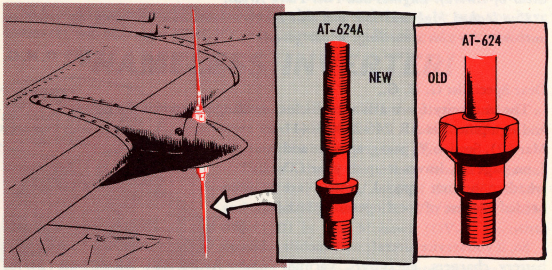


It's like this, see.

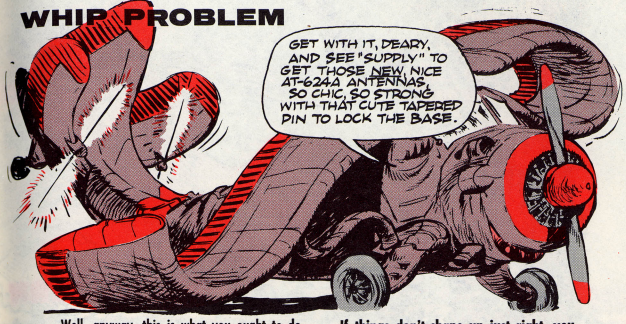
If your favorite big gas bird is sporting an ARC-44 radio set, it's using the AN/ARA-31 antenna group. Which means you've got four antenna elements —which may be either AT-624/AR's or AT-624A/AR's, or a combination of both.

Well, the old AT-624's never were quite up to snuff since there wasn't any good way to attach the fiberglass whip section to the metal base. And with all that vibration from the plane and stuff like that, the whip really took a beating.

So, along comes the new, improved AT-624A, with a taper pin designed to lock the whip to the base. Good show.



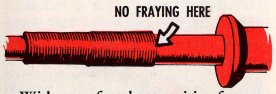
Just one little ol' thing, though. Some of the A models missed out on the pin, so improvement-wise, your antenna elements may never have left the ground. Or element-wise, you may be Zero-Zero.



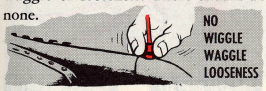
Well, anyway, this is what you ought to do:

If you have any of the plain 624's (FSN 5821-503-3494) turn 'em in for the A models (FSN 5821-552-0500) the first chance the supply situation permits.

But if you already have some of the 624A's—or get some as replacements —look 'em over with the keen, unblinking eye of the eagle. See if there's any fraying or looseness of the nylon wrapping cord where the whip joins the base. There should be none.



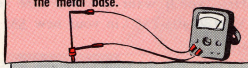
With your firm but sensitive fingers, apply a little pressure to the base of the whip to see if there's any wiggle, waggle or looseness. There should be none.



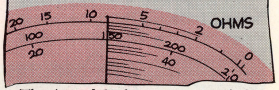
If things don't shape up just right, you can test the suspicious elements this way:

1. Scrape off a layer of paint at the tip of the whip to expose the end of the conductor wire.

2. Touch one lead of a low-range ohmmeter to the exposed wire and the other lead to the metal base.

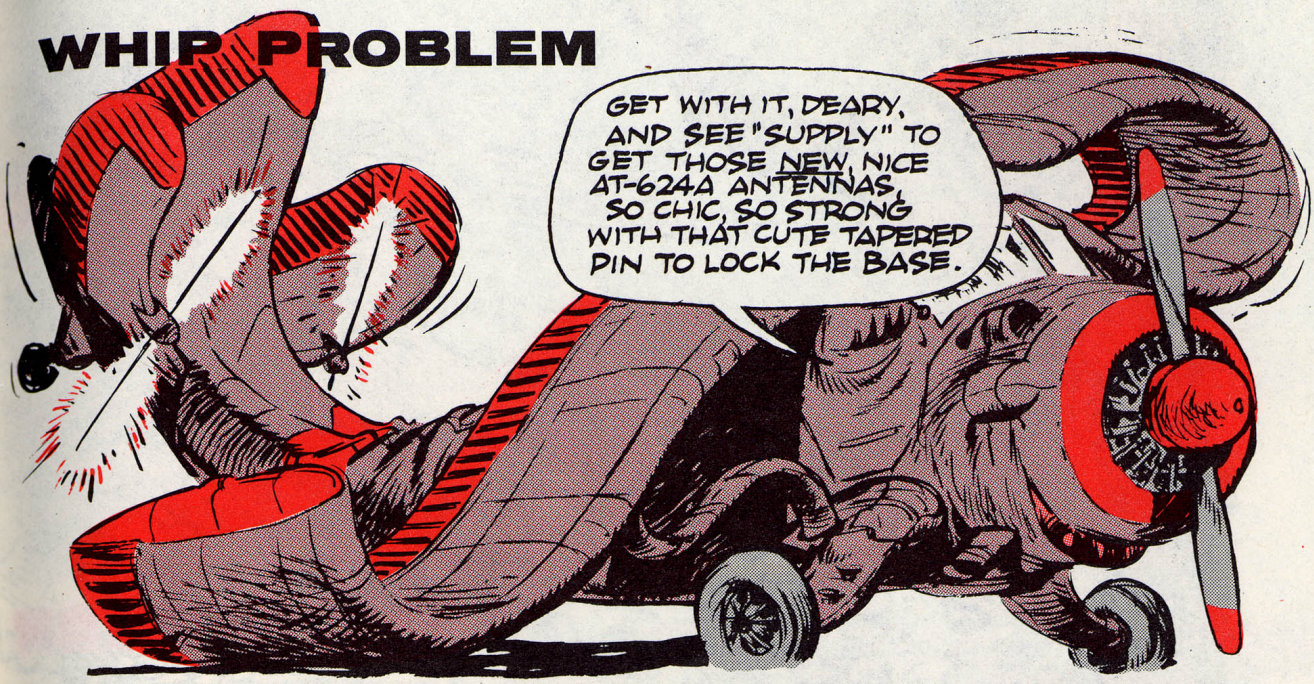


3. If you get any sort of a resistance reading, you've got a damaged conductor. Replace it.



The A models that came out missing the pin are Order Numbers 4227-PP-61, 4285-PP-61 and 15025-PP-62. The elements under the last order number, however, are stronger than the others and should be used when possible.

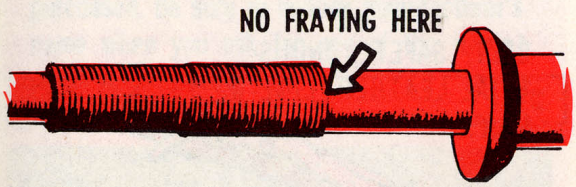
WHIP PROBLEM



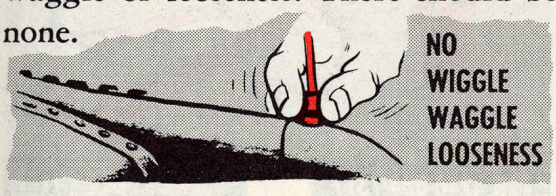
Well, anyway, this is what you ought to do:

If you have any of the plain 624's (FSN 5821-503-3494) turn 'em in for the A models (FSN 5821-552-0500) the first chance the supply situation permits.

But if you already have some of the 624A's—or get some as replacements—look 'em over with the keen, unblinking eye of the eagle. See if there's any fraying or looseness of the nylon wrapping cord where the whip joins the base. There should be none.



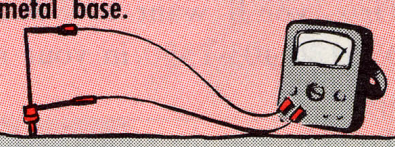
With your firm but sensitive fingers, apply a little pressure to the base of the whip to see if there's any wiggle, waggle or looseness. There should be none.



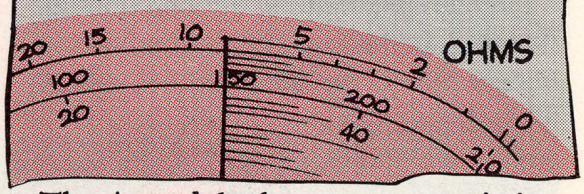
If things don't shape up just right, you can test the suspicious elements this way:

1. Scrape off a layer of paint at the tip of the whip to expose the end of the conductor wire.

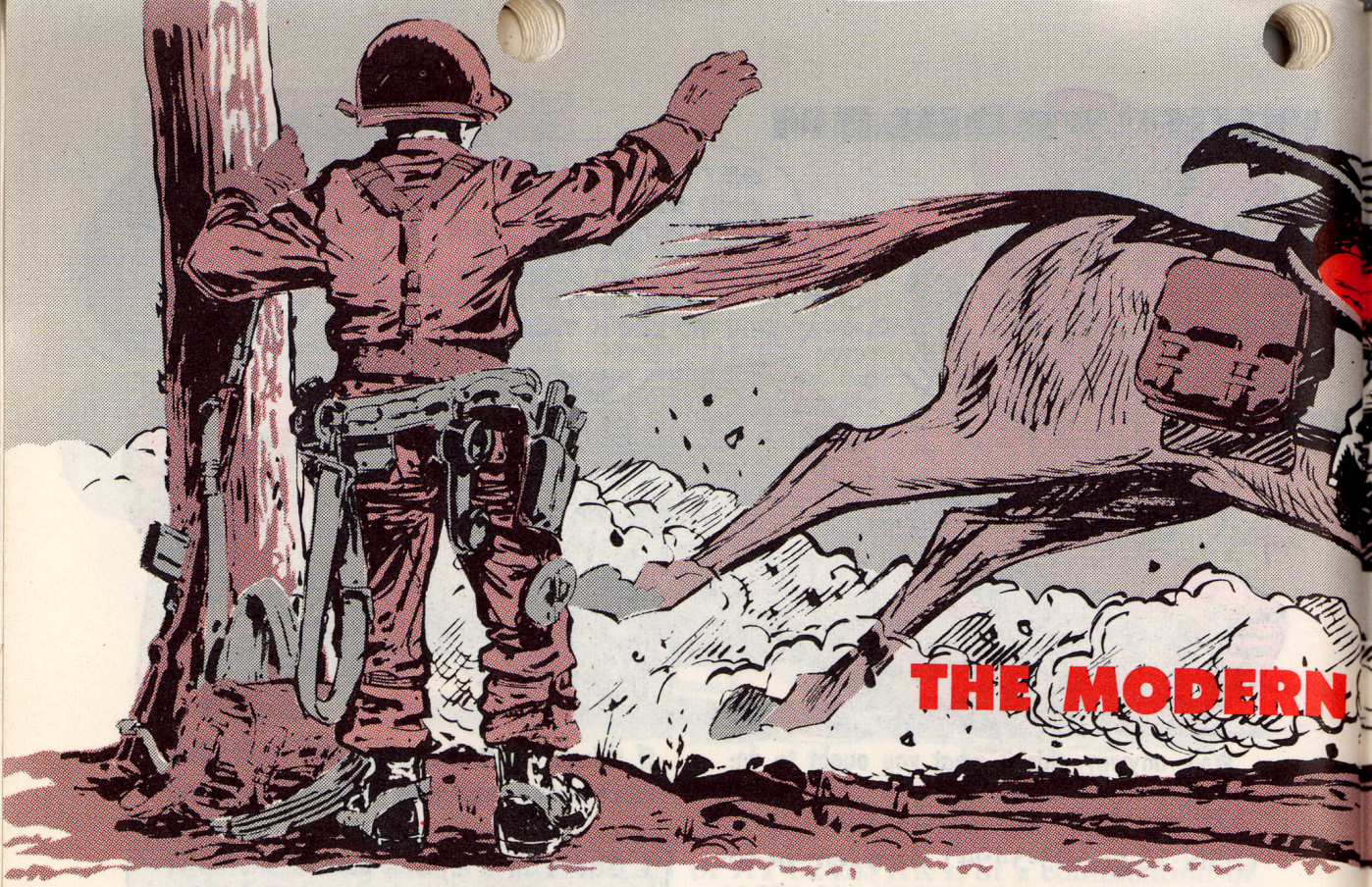
2. Touch one lead of a low-range ohmmeter to the exposed wire and the other lead to the metal base.



3. If you get any sort of a resistance reading, you've got a damaged conductor. Replace it.



The A models that came out missing the pin are Order Numbers 4227-PP-61, 4285-PP-61 and 15025-PP-62. The elements under the last order number, however, are stronger than the others and should be used when possible.



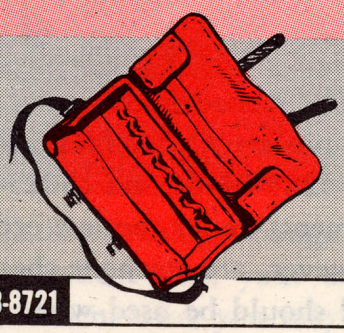
If Paul Revere had to get the message through today he wouldn't check the shoes on his horse, or he wouldn't check his saddle. He would check his lineman's equipment to make sure he could repair the lines whenever and wherever necessary.

So, if you're the modern Paul Revere that has to get the message through, you'll want to make sure your equipment's in good shape.

First, you'll want to make sure your TE-21 Lineman's Equipment tools, FSN 5180-403-1350, in your new SM 11-4-5180-R02 are all there and in good shape.

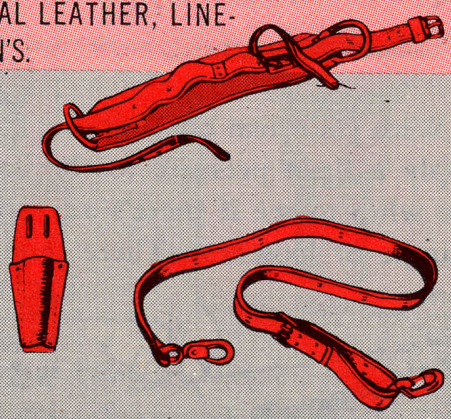
To help you do your checking, here's what you should have:

BAG, TOOL: duck; mildew resistant; waterproof; OD; 1 compartment; strap fastening; cotton webbing handgrip, and shoulder strap; fiberboard framework; 20-9/16-in over-all length, 8½-in over-all width, 9-in over-all height.

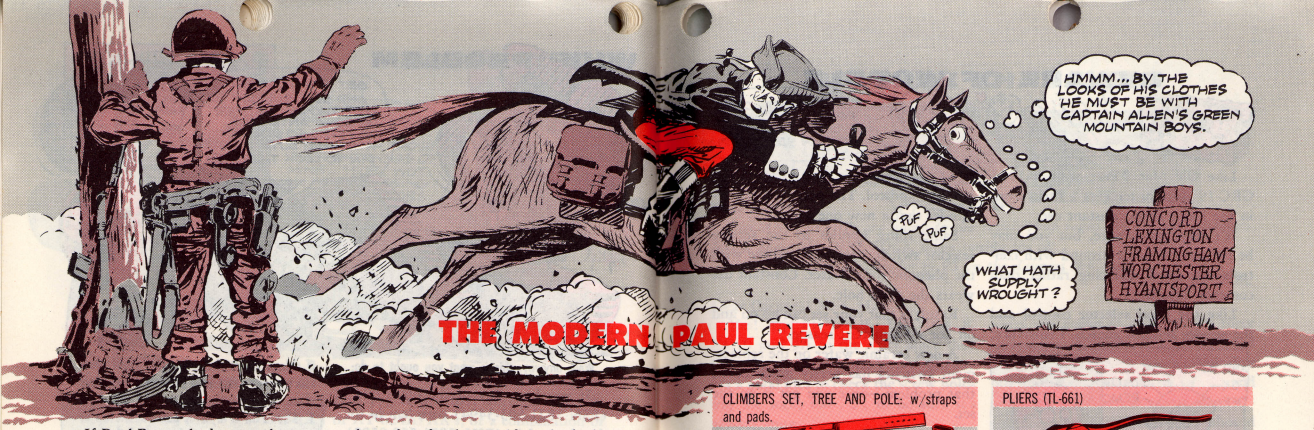


FSN 5140-498-8721 QM

BELT, SAFETY, INDUSTRIAL LEATHER, LINEMAN'S.



FSN 4240-684-7317 CHEM



THE MODERN PAUL REVERE

If Paul Revere had to get the message through today he wouldn't check the shoes on his horse, or he wouldn't check his saddle. He would check his lineman's equipment to make sure he could repair the lines whenever and wherever necessary.

So, if you're the modern Paul Revere that has to get the message through, you'll want to make sure your equipment's in good shape.

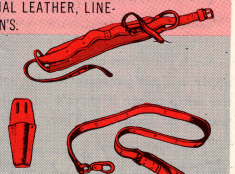
First, you'll want to make sure your TE-21 Lineman's Equipment tools, FSN 5180-403-1350, in your new SM 11-4-5180-R02 are all there and in good shape.

To help you do your checking, here's what you should have:

BAG, TOOL: duck; mildew resistant; waterproof; OD; 1 compartment; strap fastening; cotton webbing handgrip, and shoulder strap; fiberboard framework; 20-9/16-in over-all length, 8½-in over-all width, 9-in over-all height.

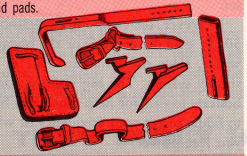
FSN 5140-498-8721 — QM

BELT, SAFETY, INDUSTRIAL LEATHER, LINEMAN'S.



FSN 4240-684-7317 — CHEM

CLIMBERS SET, TREE AND POLE: w/straps and pads.



(The gaffs, guards, strap pads, and straps are nonstocked items, so any replacements after original issue will have to be local purchased. Be sure to include manufacturer's name when you ask for any of the items.)

FSN 4240-273-9668 — ENG

HAMMER, HAND: sledge, blacksmith's, doubleface, 2½ pounds.

FSN 5120-203-4656 — QM

PLIERS (TL-661)

FSN 5120-555-8953 — QM

SCREWDRIVER, FLAT TIP: flared tip, plastic handle; nom. tip width 3/16-in; nom. blade length 8-in.

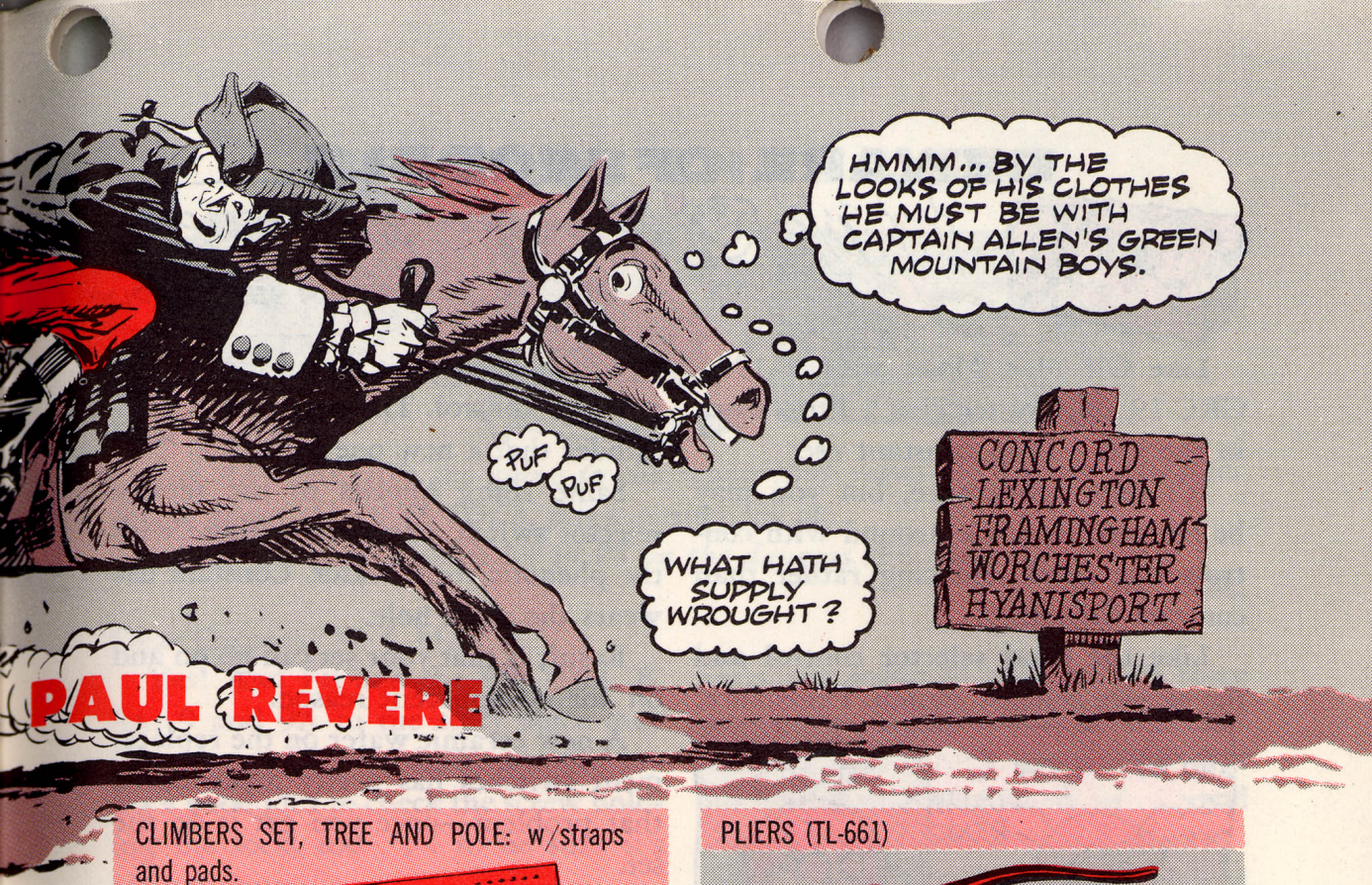
FSN 5120-237-6985 — QM

TOOL, CRIMPING, TERMINAL, HAND: manual compression.

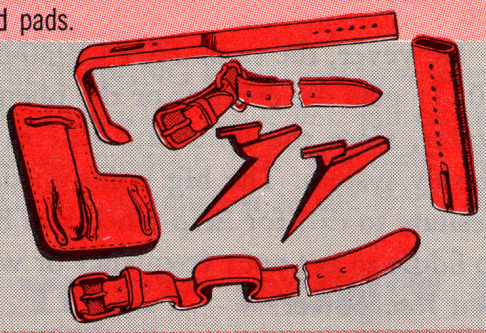
FSN 5120-224-9413 — QM

WRENCH, LINEMAN'S: wrench openings, inches, 5/8, 13/16, 15/16, and 1 1/8.

FSN 5120-277-4248 — QM



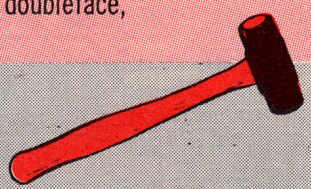
CLIMBERS SET, TREE AND POLE: w/straps and pads.



(The gaffs, guards, strap pads, and straps are nonstocked items, so any replacements after original issue will have to be local purchased. Be sure to include manufacturer's name when you ask for any of the items.)

FSN 4240-273-9668 — **ENG**

HAMMER, HAND: sledge, blacksmith's, doubleface, 2½ pounds.

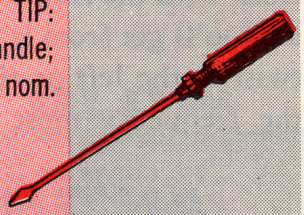


FSN 5120-203-4656 — **QM**

PLIERS (TL-661)

FSN 5120-555-8953 — **QM**

SCREWDRIVER, FLAT TIP: flared tip, plastic handle; nom. tip width ⅜-in; nom. blade length 8-in.



FSN 5120-237-6985 — **QM**

TOOL, CRIMPING, TERMINAL, HAND: manual compression.

FSN 5120-224-9413 — **QM**

WRENCH, LINEMAN'S: wrench openings, inches, ⅝, 13/16, 15/16, and 1⅛.

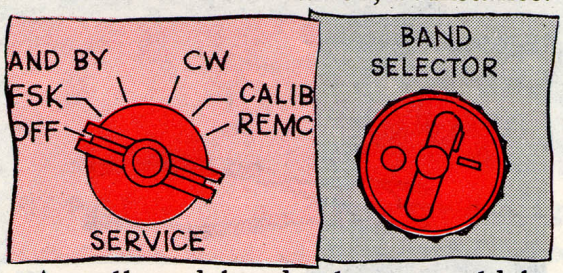
FSN 5120-277-4248 — **QM**

BEWARE OF WOBBLE

Like Ole Man Mose, your T-195/GRC-19 transmitter gets a little worn in the joints from constant use.

It's serviceable, sure, but you may be tempted to fiddle around with controls that need replacing rather than constant adjusting.

Like the band selector control and the service selector switch, f'rinstance.



A well-used band selector could be flush with the frequency you want, but all you'll get from it is silence. A slight twist to the left or right will give you the frequency most of the time, but what you need more than a slight twist is a new control. The play in it is a reminder that a new one's due.

Same thing applies to the service selector switch, particularly those with the phenolic rotor wafer. Constant use wears the shaft hole.

Result is that your set can go on and off for no apparent reason.

A new ceramic wafer on the replacement switches has pretty much cured that problem—once you get it on the set.

However, the same FSN (5930-696-5024) gets the ceramic or the phenolic wafer, since the latter are still in the supply system. The big point is: don't hesitate to call for help when you have to fiddle to get your frequency or when you lose power.

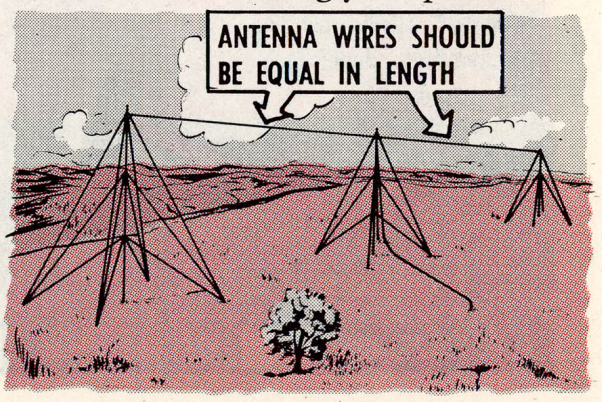
AN/GRC-19 FIXED ANTENNA

One careless measurement of your antenna wires on the center-fed Hertz doublet can pop the PA tube in your Angry 19 faster'n you can say "KO!" The doublet makes up from the AN/GRA-12 antenna group.

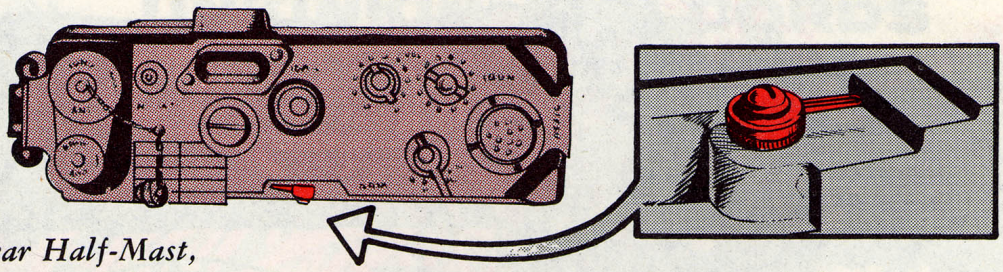
A slight mismatch in antenna wire lengths—as little as three inches—can create additional plate current which can knock out the power amplifier tube (V-201 tube type 4X150D).

Since it's part of the operator's responsibility to see that the antenna wires match, use a tape to be doubly sure of that doublet. Remember, three inches is about as much as they can differ.

If you're a little rusty on doublets, TM 11-2651 will bring you up to date.



RELEASE THAT LOCK



Dear Half-Mast,

Our AN/PRC-10's are going to the repair shop regularly because operators forget about the DIAL LOCK when tuning the set.

Could you drop a reminder in PS on the dangers this causes?

Cpl M. J. M.

Dear Corporal M. J. M.,

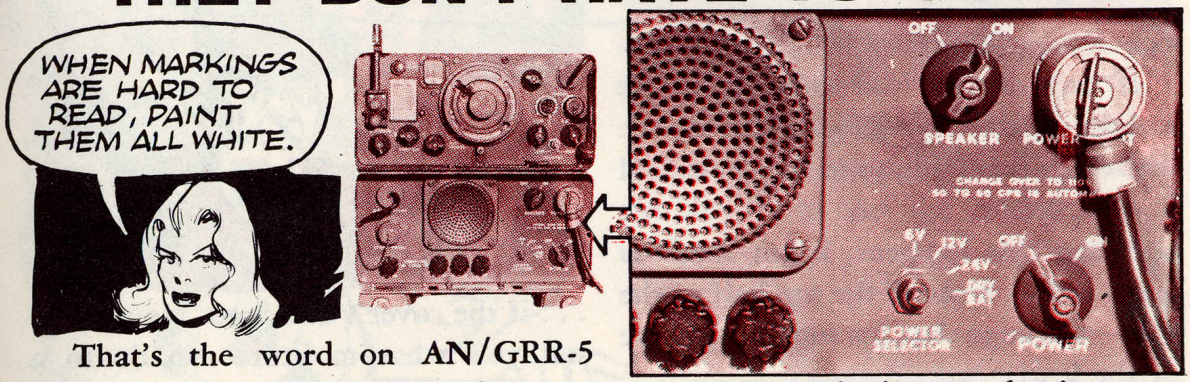
Yes! And I'll add the PRC-10A, 8, 8A, 9 and 9A to the story since they have the same controls. You might say it's a good idea to check the screw holding the lock, too . . . to be sure it's always snug.

The TUNING knob does have some built-in slippage, but if you put on the pressure without first releasing the DIAL LOCK (turn it to the left), the gears are going to strip as you force 'em against the lock. This damages the lock, and the sprung gears allow that old familiar drifting to set in . . . and another Perk hits the repair shop.

Since the TUNING knob should turn freely during operation of the set, any resistance means you probably forgot to unlock it. So check that lock . . . fast!

Half-Mast

THEY DON'T HAVE TO GLOW



That's the word on AN/GRR-5 radio receiving set panel markings.

When the front panel markings on your R-174/URR receiver and the PP-308/URR power supply lose their glow, it's not necessary to rush in with the luminous paint.

There's no need for the markings to glow, and the paint costs money and takes too much time, anyhoo!

The word is: When the markings get hard to read, fill 'em in with a permanent white paint and cover with a clear varnish—as per Mil Spec Mil-V-6894. It meets the requirements of Mil-M-13231 (Marking of Electronic Items).

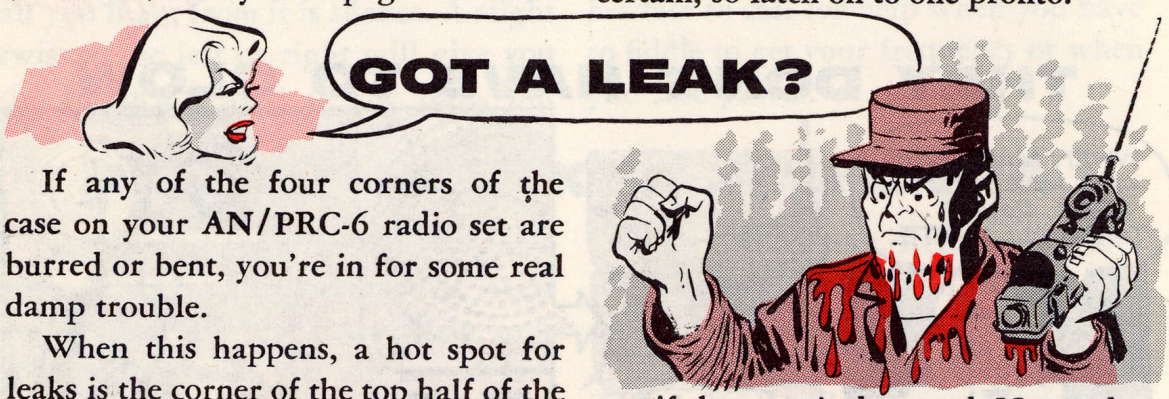
A LITTLE SHORT ON SHAFTS...

The poop from the group is that more and more RT-66-68/GRC receiver-transmitters are being shaft shorted, causing a lot of R53 meter shunt resistors to be burned out.

The shaft is the transmitter antenna coupling shaft. If the control stop mechanism is not adjusted right, it lets Coil L-23 come into contact with Coil L-22, causing a short which burns out the resistor. Just as simple as that.

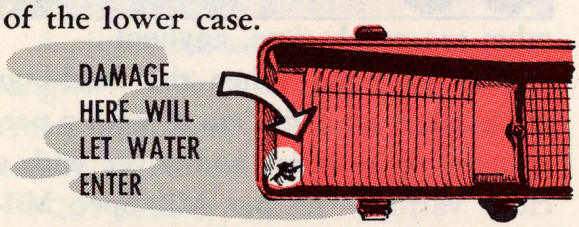
Change 1 (8 Apr 55) to TM 11-289 (3 Dec 53) tells you on page 7 to check for the proper operation of the stop mechanism. It then gives your mechanic the dope on how to adjust the stop mechanism on pages 11-12.

If you don't have this Change 1 to the TM, you're going to be hurtin' for certain, so latch on to one pronto.



If any of the four corners of the case on your AN/PRC-6 radio set are burred or bent, you're in for some real damp trouble.

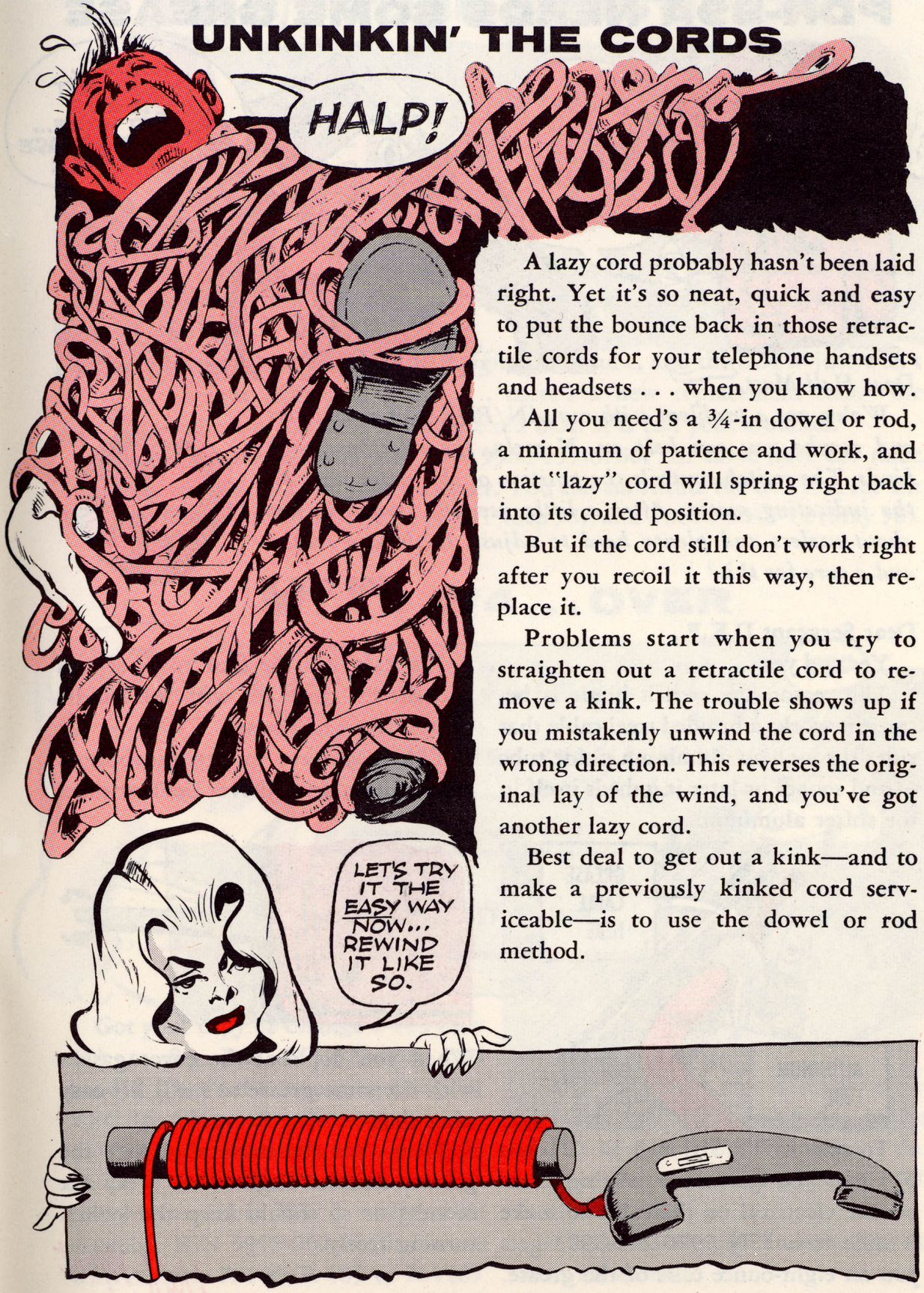
When this happens, a hot spot for leaks is the corner of the top half of the case—the edge that fits into the groove of the lower case.



Even with the rubber gasket in place, rain, splashed water and other moisture can still find its way inside the set . . . if the cover's damaged. No need to tell you what moisture can do to a radio's guts. Just hang up the "out-of-net" sign.

Give the case a look, and send it to support fast if it's damaged. Let 'em fix it while it's still minor. A water-corroded set costs a lot more to fix than a chipped case—so don't be shy about speaking up.

UNKINKIN' THE CORDS



A lazy cord probably hasn't been laid right. Yet it's so neat, quick and easy to put the bounce back in those retractile cords for your telephone handsets and headsets . . . when you know how.

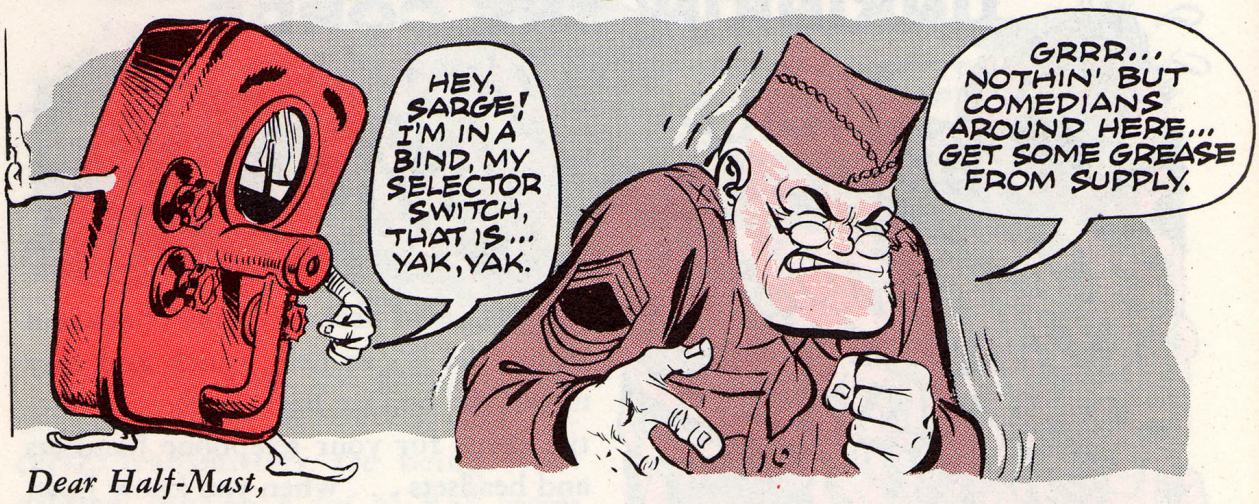
All you need's a ¾-in dowel or rod, a minimum of patience and work, and that "lazy" cord will spring right back into its coiled position.

But if the cord still don't work right after you recoil it this way, then replace it.

Problems start when you try to straighten out a retractile cord to remove a kink. The trouble shows up if you mistakenly unwind the cord in the wrong direction. This reverses the original lay of the wind, and you've got another lazy cord.

Best deal to get out a kink—and to make a previously kinked cord serviceable—is to use the dowel or rod method.

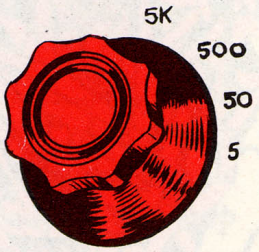
PDR-39A NEEDS SOME GREASE



Dear Half-Mast,

We've got a problem with our AN/PDR-39A radiac sets and maybe you can help us. Namely, the selector switch binds. The switch controls the position of the meter scale on the indicating meter. After a little use, the switch is just about useless and plenty hard to adjust. Is there a reason and a cure for this?

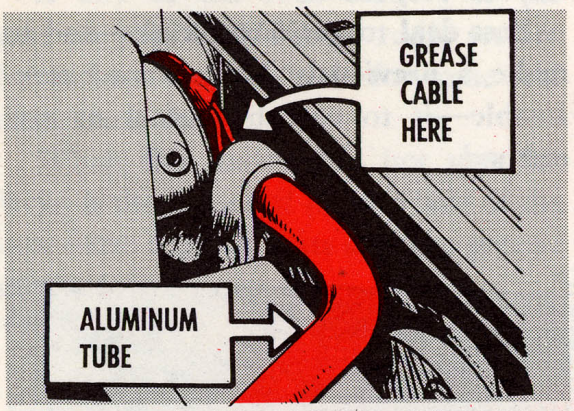
SGT D. K. F.



Dear Sergeant D.K.F.,

Yes and yes.

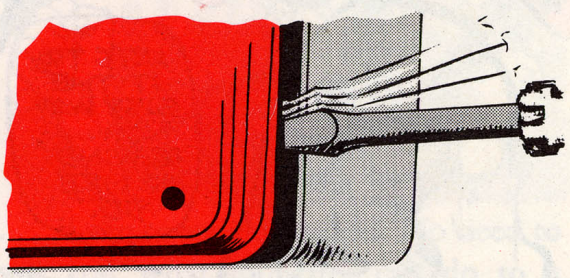
The reason the switch binds is because it works a braided steel cable that rides through an aluminum guide tube —and sooner or later it imbeds itself in the softer aluminum.



To cure it, TB SIG 213-34 (21 Jun 61) says you can use Insulating Compound, electrical on the cable to make it slide free. FSN 5970-221-5903 gets you an eight-ounce tube of the grease.

Just take out the four cover screws and lift the cover off with the handle on the front of the set.

You may have to pry the bottom cover with a screwdriver the first time.

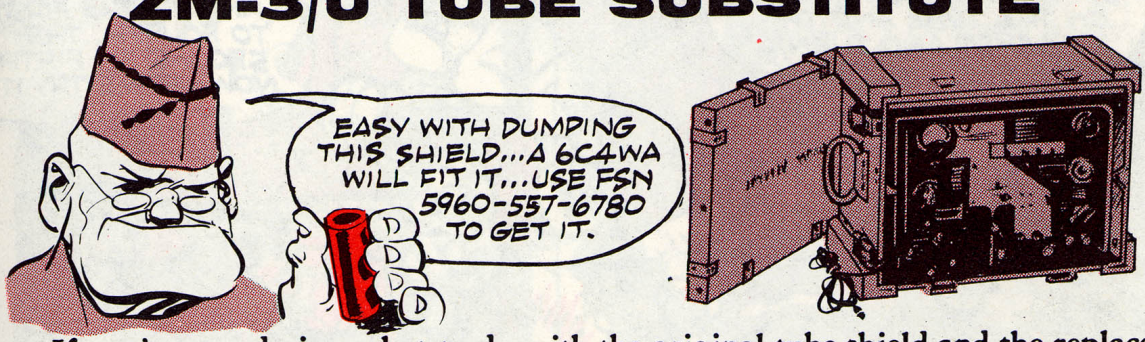


When you do, coat the cover gasket with the same grease so's it'll lift easy after that.

Then, coat the steel cable with the grease. Another light coat every six months or so should keep the switch turning freely.

Half-Mast

ZM-3/U TUBE SUBSTITUTE

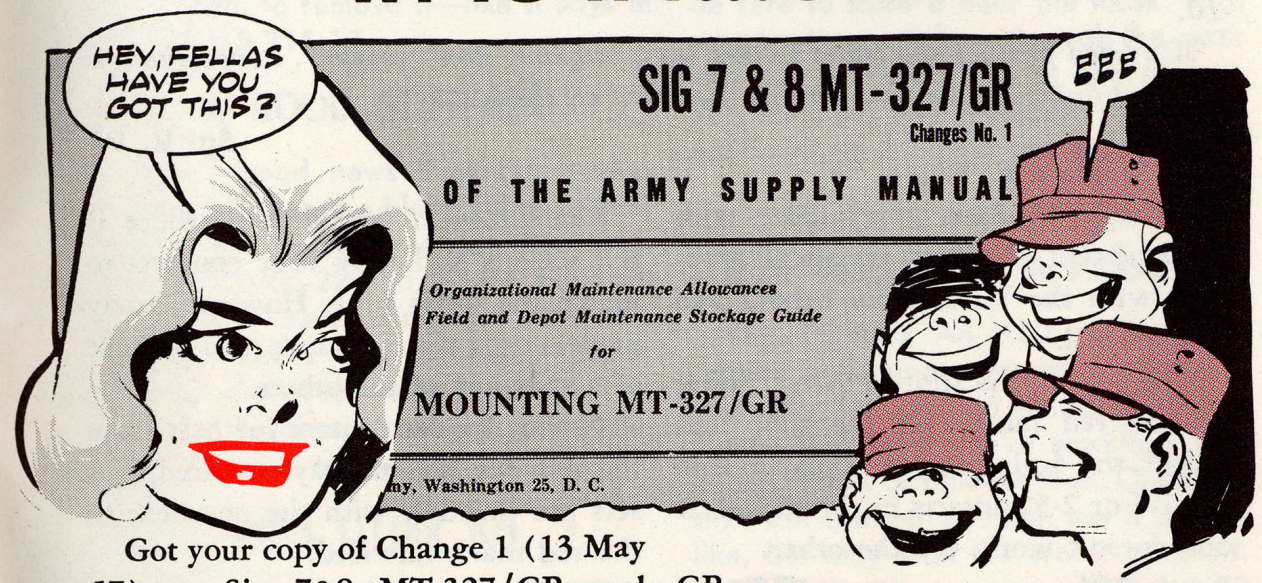


If you're wondering what to do with the original tube shield and the replacement 6C4W electron tube for your ZM-3/U and ZM-3A/U analyzers, stick around a minute.

The shield was designed for the original 6C4 tube, and the 6C4W just won't fit in it (height difference). So . . . there's a new replacement tube—the 6C4WA—which is the same size as the old 6C4. It'll end your troubles.

You can get the 6C4WA with FSN 5960-557-6780. All three have the same reference symbol, V2, in your analyzer. You can substitute the 6C4WA for the 6C4W spec in your TM 11-6625-241-12P (Sep 58), and TM 11-5043-12 (May 58).

W1 TO W4...OVER



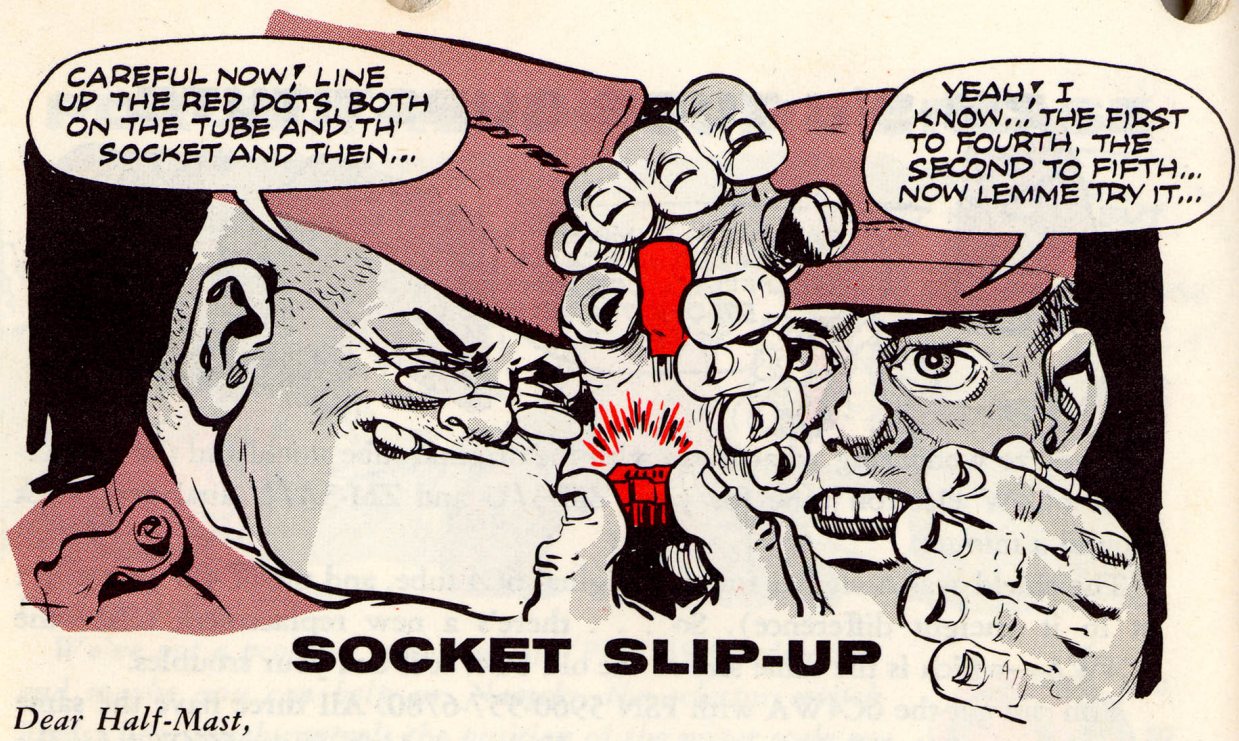
Got your copy of Change 1 (13 May 57) to Sig 7&8 MT-327/GR real handy? That's the mounting for your VRC-16, 17 or 18 radio sets.

Well, let's sorta start all over again on those W1 and W4 cable assemblies.

Cable assembly W1 is really cable assembly FSN 5995-262-7266, for use with receiver R-108, R-109 or R-110/GR.

Cable assembly W4 is really cable assembly FSN 5995-262-6755, to be used as a power connection from the mounting to power supply PP-109/GR or PP-112/GR.

So make a little note and save lots of sweat all around.



SOCKET SLIP-UP

Dear Half-Mast,

TM 11-4065, page 43, para 61c, says that when replacing the V2 (tube type #5676), the pin nearest the red dot on the tube should be inserted in the second pin socket from the red mark on the tube socket.

As you know the socket is on the TRANS OSC box of the AN/PRC-8, -9 and -10.

We tried putting the tubes in this way, but they don't work . . . even though they test out OK. Can you give us the word on this?

Sgt R. W.

Dear Sergeant R. W.,

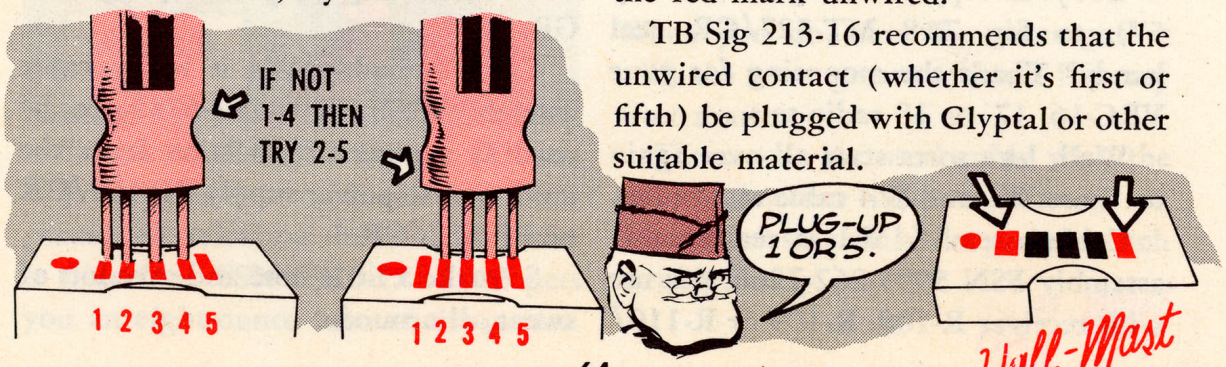
Be happy to. Alert your buddies with the Perk 6 (who have identical problems with the V2 and V9 tubes) and read a spell.

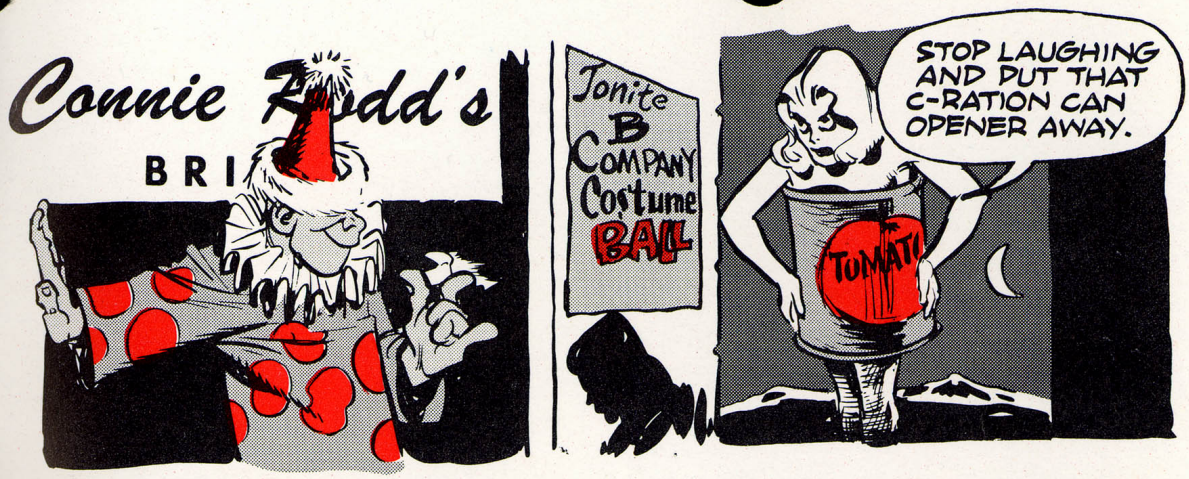
The solution is simple. After lining up the red marks on the tube and socket, the 4-pin tube can only go into the 1-4 or 2-5 contacts in the socket. If one doesn't work, try the other.

The problem wouldn't be there if the sockets had only four contacts to match the 4-pin tube. However, early models used the 5-contact jobs because of a shortage of the others.

Normally, the contact furthest from the red dot was to stay unwired, but sets got through with the one next to the red mark unwired.

TB Sig 213-16 recommends that the unwired contact (whether it's first or fifth) be plugged with Glyptal or other suitable material.





HOT STUFF – WATCH IT

That's for sure—and that's why there's a handle on the thermo-cell dry battery (FSN 6135-603-4859) in the remote firing box of the M91 115mm multiple rocket launcher. This baby really develops high temps in a hurry . . . and stays hot even after the power has faded away. So, play it smart, allow time for the battery to cool down and then use the handle to remove it—like it says in TM 9-1055-215-12.

A GOOD STIFFENER

Here's good news if you're having trouble keeping the blank firing attachment secure on your M60 machine gun. MWO 9-1005-224-20/2 (27 Feb 63) provides a reinforcing kit with two stiffener plates and a center spacer. These'll give a lot more rigidity to the frame and keep it from collapsing and losing tension on the sight.

M113 LITTER KIT

Still having trouble getting the litter kits for your M113 Personnel Carrier? It's Kit, Litter, FSN 2590-771-9113 (Ord Number 10866194), listed in Federal Supply Catalog C2590-ML Vol 1 (SM9-C2590-ML-Vol 1) Apr 63 on page 166. Cost per kit is $25.10.

M5A1 P AND T SETS

CV crews note . . .

Your M5A1 protection and treatment set and your M14 (M14A1 or M14A2) combat vehicle mask just have to part company pronto-like. Otherwise the set's metal container may damage the mask's face piece or its lens.

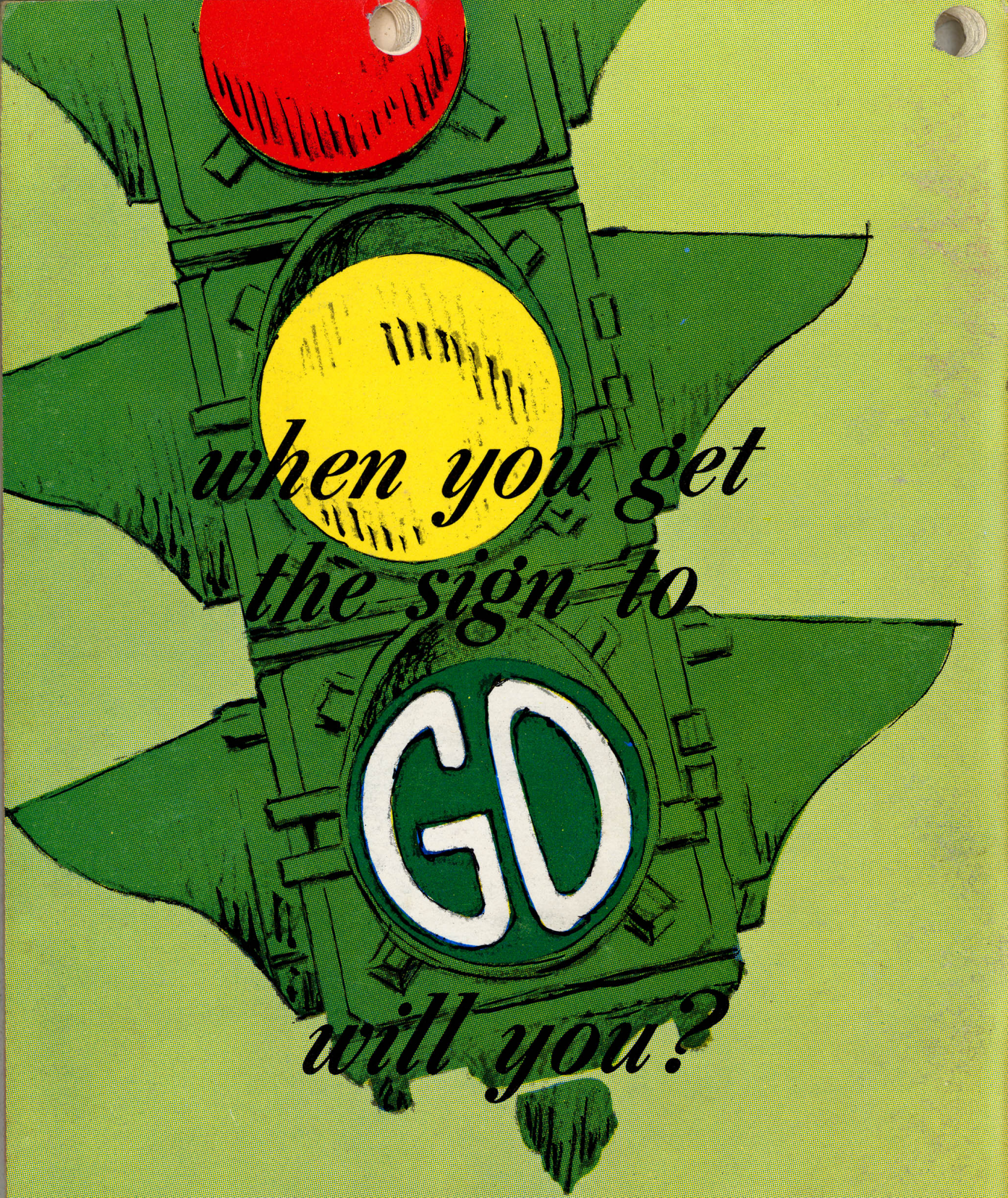
Until you hear different keep the P and T set out of the mask's carrier, but be sure to store it near the mask. That way anytime you have to grab the mask you can put the M5A1 in one of your easy to reach, roomy pockets . . . but try not to sit on it if you can help it.

M20 BREATHING APPARATUS

Yep. It's true. An M20 oxygen generating breathing apparatus will keep you going for 30 or 45 minutes (depending on how hard you're working). But, buddy, that's continuous time. Once you start the canister you can use it as you like, but only until the alarm goes off.

That is, just because you used an M20 for only 15 minutes don't expect to pick it up later and get 20 or so more minutes out of it. Once the alarm's gone off, that's it. It'll be ready for another 30-45 minute stretch **only after you give it a new canister** and reset the timer.

Would You Stake Your Life on the Condition of Your Equipment?



THE CONDITION OF YOUR EQUIPMENT WILL DECIDE!